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Congenital Visceral Anomalies As Exemplified By The Developing Vascular System*

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In attempting to discuss congenital visceral anomalies, there are one of two ways to approach the subject. Either I can discuss in a purely descriptive fashion some of the anomalies I have seen myself, or I can seek to arrive at certain conclusions regarding anomalies in general and their causes in particular. I think you will agree with me that this latter approach is distinctly more appropriate for the present occasion.

My own interest in anomalies has centered largely about those of the vascular system. Regarding vascular anomalies, I believe I am able to say this: that even gross deviations from the normal are due to small early irregularities or arrests in development, whereby the blood stream is diverted from a so-called normal channel into one which is just as good but which is not usually selected. Let me give you an example of how this works.

Take the developing limb, for instance. In early stages, the limb-bud is filled with an equi-potential capillary net, out of which are to develop the definitive arteries and veins, as we find them in the finished product. As growth continues, certain channels of the capillary net become larger than others, and acquire thicker walls, because these are the channels through which a greater volume of blood is passing. In other words, the blood flows more rapidly through some channels than others and develops a greater head of pressure. In response to this increased rate and increased pressure the capillary channel enlarges in lumen and develops muscular and elastic coats, in brief, is converted into an artery or vein, as a result of the growth stimulus provided by the increased volume of blood.

Regions of the capillary bed which are transmitting less volume of blood are converted into smaller arteries and veins, arterioles and venules, those which transmit still less remain as capillaries, and those through which the blood has ceased to flow degenerate and finally disappear. Thus by a process of selection on the basis of blood volume a definitive or final pattern of blood vessels is condensed out of the original capillary net.

I have called this original capillary net equi-potential, because, theoretically at least, any one channel has an equal potentiality with any other for becoming the path of the main artery or vein. Then what is the factor which decides the path to be selected? There is one all-pervading factor governing the operation of the developing vascular system. This is the factor of *minimum work* (see Murray, 1926, and Weyrauch and De Garis, 1937). Blood, like any other liquid, flows most rapidly and under a greater head of pressure through those channels which offer it the least work to do in overcoming friction.

Then the question arises: Since we start with an equi-potential capillary system,

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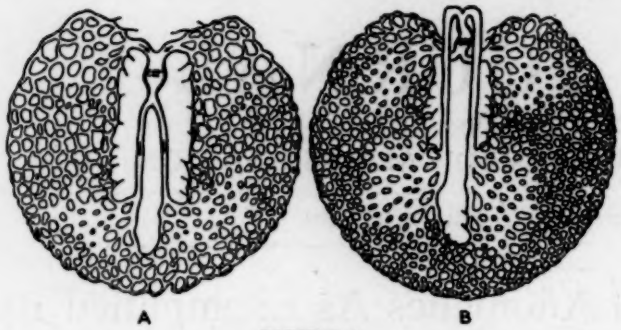

FIGURE I

This figure shows two early stages in development of the area vasculosa in the chick. It is seen that parts of the capillary net receiving blood from the heart and delivering it back to the heart are becoming enlarged by reason of the direction of flow (increased rate and pressure) imparted by the heart itself.

how does it happen that the blood does not flow with equal velocity and equal pressure through the whole system? We assume that in very early stages it does. But we must remember that in the case of the limb-bud, for instance, growth is going on very rapidly. The undifferentiated mesenchyme soon begins to lay down muscles, skeletal elements, fascias; and the nerves find their way from the neural tube into the various fields of muscles and integument. In brief, the bud is becoming a limb, with all the complexity of structure which characterizes a limb.

Let us also remember that this complexity of structure is being laid down right in the midst of our original capillary net, in fact is being laid down as a result of the metabolic exchanges provided by the blood in that capillary net. Then what happens to the capillaries?

I have already indicated the answer to this question, but am now able to answer it more fully. The environment of those capillaries has ceased to be undifferentiated mesenchyme, and has now become muscles, cartilages, fascias. And the large nerve trunks have found their way to these various differentiated parts. To this rapidly growing and changing environment the capillary net must adjust itself, and this it does very early by the enlargement of those of its channels through which the blood is passing most rapidly, and by the disappearance of those other channels through which blood has ceased to flow. The developing vascular system, then must be regarded as very labile and adjustable to the other contents of the limb, or of any other part we may be considering. In fact, we may say that just what arteries and veins we find in a given part, such as the limb, are determined by a process of selection, or in truth by several processes of selection, wherein the vascular system always conforms to its surroundings, i.e., the muscles, nerves, etc., which form its environment. And the guiding factor in all these selections or adjustments is the factor of minimum work.

At this point I could go into much detail on the various stages of development of the forelimb arteries, since many investigations have been carried out on this subject. Rather than burden you with these details, I shall confine my illustrations and comments to a few stages in development of the area vasculosa, which exemplifies the capillary net, and to but three stages in development of the early limb arteries. The first four figures are from the work of Thoma 1893) on the histogenesis and histomechanics of the vascular system.

The question may be asked: Since we start with an equi-potential system of capillaries, meaning a system out of which

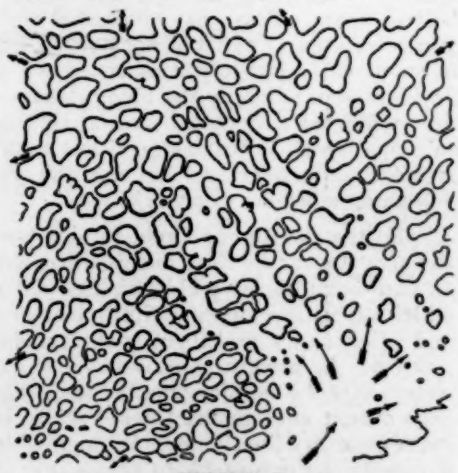

FIGURE II

This is a much enlarged view at a slightly later stage. The arrows indicate the direction of blood away from and to the heart. Some distinctly enlarged channels are apparent throughout this sample of the area vasculosa.

any sort of vascular pattern may develop, then why do we have, for instance, in the dissecting room, very much the same arteries in one arm after another? There are, of course, variations of arterial branches, great numbers of them, some quite large and conspicuous. But in general it is fair to say that the human arm has the axillary, brachial, radial, ulnar and other large arteries in rather surprising

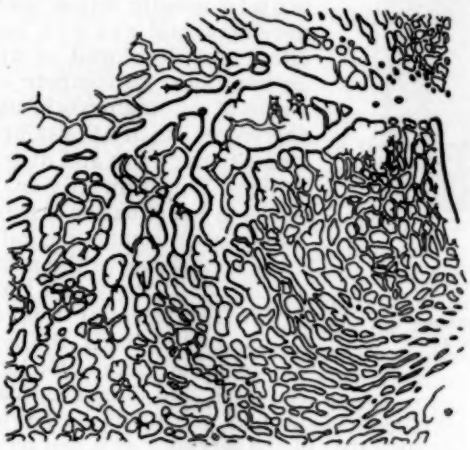

FIGURE III

A vascular tree is here clearly demonstrated as leading away from the heart through the area vasculosa. Much of the area is, and will continue to be, occupied by the capillary net.

FIGURE IV

Between this and the previous figure many stages have been omitted. This figure shows well differentiated arteries (in black) and veins (in white), with an extensive capillary plexus filling the space between the larger vessels.

(The following three figures are from the work of Woollard (1922) on the forelimb arteries of the pig.)

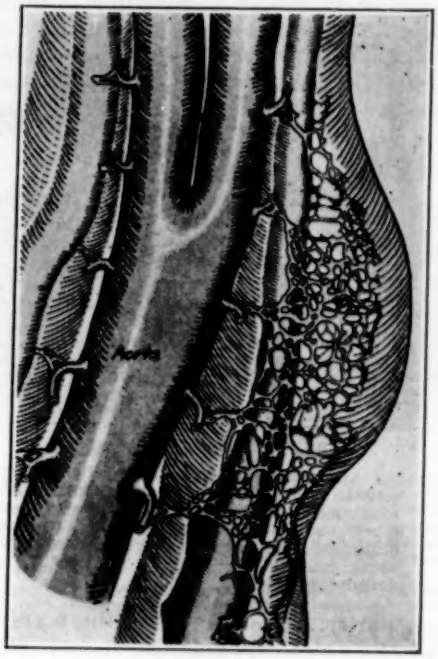

FIGURE V

A very early limb-bud stage, where the invading capillary net is shown with five segmental supplies from the dorsal aorta.

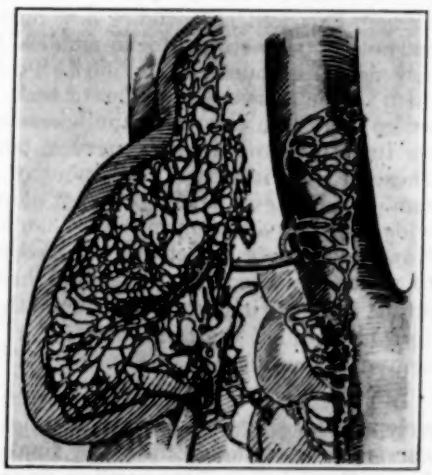

FIGURE VI

An older limb-bud stage, showing a wide-meshed capillary net and an axial artery beginning to condense in the central substance of the bud. All segmental supplies from the dorsal aorta have been lost except one, which is to become the definitive subclavian artery.

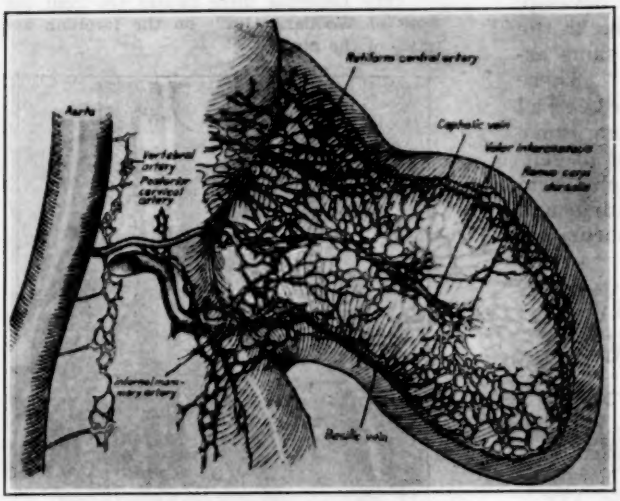

FIGURE VII

A still more advanced limb-bud, where the retiform central artery foreshadows the axillary-brachial channel. Also some elements of the subclavian artery, e.g., the vertebral, superior intercostal and internal mammary branches, are present in retiform extensions. The marginal veins, namely the cephalic and basilic, are here fairly definite structures.

regularity. In other words the text-book picture of arm arteries, at least of the larger ones, is usually not far from what one finds in the cadaver.

Then in the light of what we have already said about the development of these arteries, how do we account for this regularity? Paradoxically we are now asking, not how do we account for anomalies, but how do we account for the absence of them? The answer is not far to seek. If we go from arm to arm in the laboratory, we find the same muscles, nerves, bones. These are the inherited equipment of the arm, and this equipment does not show a wide range of variation in the human arm. Now since these structures are the ones to which the vascular system has had to adjust itself during development, we therefore have much the same arteries in one arm after another.

In some cases it is true that certain developmental stages of the arm arteries are carried over to the definitive or final pattern. Persistence of the median artery as a large trunk in the forearm is one such instance; persistence of both superficial and deep channels in the upper arm is a much more frequent instance. Such gross deviations from the normal we call anomalies. That they serve the arm just as well as the normal pattern, and therefore have remained, must be attributed to the fact that from the time of their early selection they have served as the paths of minimum work, to such an extent, in fact, that the normal pattern, which would usually follow such developmental stages, has either not developed at all, or has failed to compete as a path of minimum work, and therefore has not attained its customary size and distribution. This is directly analogous to the situation arising where two competing railroad systems serve the same territory. If there is a time or tariff differential in favor of one of the roads, the less favored road can not for long compete, and must eventually go out of business or restrict its service to such part of the territory as it can serve economically. In the case of arteries the tariff differential is simply a matter of work required to overcome friction.

Now if you push the question beyond this point and ask why in any given case an embryonic pattern, i.e., an anomaly, has persisted, then I am obliged to become rather general. In some few cases the presence of an unusual muscle or an aberrant arrangement of nerves, especially in the brachial plexus, may be found to explain the arterial anomaly. But in most cases one is merely confronted with an anomalous artery and nothing else. Then in such a case the best and most that anyone can say is that at some critical stage in development such an artery became and remained the path of minimum work, because of some arrest or irregularity in the development of its environment, that is, its related muscles, nerves, etc. Such an arrest or irregularity was obviously transient, and was fully compensated as development went on, since no trace of it is left, except as reflected in the anomalous artery itself.

I have discussed this question of arterial anomalies at some length, first because it

is a field with which I am familiar; second because it illustrates as clearly as any other one of the fundamental categories of anomalies. Anomalies of the kind I have been discussing are the ones due to early transient arrests, which as a rule do not affect at all the economy of development or of post-natal life. A very large number of the anomalies found in the dissecting room are of this type.

Another type of anomaly which I can only mention briefly in closing, does as a rule affect the economy of development, and may even cut it short. This is the type due, not to some small local arrest or irregularity, but to an arrest of the whole embryo at an early critical stage. The first and most critical of these stages is that of gastrulation, or what corresponds to it in the mammalian embryo. If gastrulation is in any way delayed or suppressed, then the consequences are far reaching and profound. Anencephaly, cyclopia, doubling of the head or doubling farther down the axis, or complete doubling with production of single ovum twins are a few of the many things that may happen, depending on just when, to what extent and for how long the delay occurs. My time is much too short to permit a discussion of this dramatic category of anomalies.

But I do wish to leave with you the one generalization which I will allow myself on this occasion, namely that anomalies of whatever type are due to an altering of the developmental sequence, are due to a delay at some critical stage in development, either of the whole organism, or of one of its various parts. This, I believe, is the verdict of experimental morphology and by implication, of nature's own experiments which comprise the body of science called teratology.

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Explanation of Figures

Figure 1. (1 to 4 are from R. Thoma, 1893). A. Schematic representation of the area vasculosa in chick prior to torsion of the heart. B. The same after torsion of the heart.

Figure 2. A much enlarged sample of the area vasculosa in the region receiving blood from the heart. Some capillary channels are enlarged as a result of the direction of blood (increased rate and pressure).

Figure 3. A later stage of the same area; the enlargement and thickening of certain channels are clearly indicated.

Figure 4. A much advanced stage of the area vasculosa; arteries (in black) and veins (in white) are fully differentiated.

Figure 5. (5 to 7 are from H. H. Woollard, 1922). An early limb-bud stage in the pig; a capillary plexus has invaded the limb-bud and is fed by channels from the dorsal aorta.

Figure 6. A more advanced stage of the limb-bud, now showing but one channel of supply from the dorsal aorta; within the capillary plexus a central artery has begun to form.

Figure 7. A further limb-bud stage, now showing differentiation of branches from the subclavian artery, an extension of the retiform central artery and condensation of the marginal veins.

Chronic Arthritis and Undulant Fever
Their Interrelationship

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He who would treat arthritis in an informed and intelligent manner needs to approach the problem from the broad standpoint of the internist. Arthritis is a symptom and the causes of same are many and quite varied. The joints, after all, are much like the fundus of the eye. They may reflect locally general diseased states such as tuberculosis, trauma, specific infections such as staphylococcus, gonococcus, pneumococcus, syphilis, rheumatic fever, neurologic states such as syringomyelia, constitutional states such as gout, hemophilia, intermittent hydrarthrosis, as well as atrophic arthritis and hypertrophic arthritis.

Over the entire country, as well as in Oklahoma, an intensive campaign to eradicate brucellosis or what is also known as Bang's disease in cattle, is being waged. We, as physicians, are awakening to the fact that brucellosis in man is a not at all uncommon disease state. It will often explain many cases of chronic illness otherwise unexplainable.

That being the case, a careful study of the relation of undulant fever to chronic arthritis is not only timely but important.

Six types of undulant fever now are being listed. In the order of their importance they are:

1. Chronic or subclinical.
2. Ambulatory.
3. Latent infections.
4. Undulating fever.
5. Continuous fever.
6. Rare acute malignant type.

It is the ambulatory and especially the chronic or subclinical cases of brucellosis in man that are of interest to him who would study carefully any case giving a history of rheumatic or arthritic symptoms.

The following symptoms are often found in the subclinical or chronic type of brucellosis: arthralgia, arthritis, headache, backache, malaise, weakness, neuritis or neuralgia, myositis, leukopenia, secondary anemia, spondylitis, persistent joint stiffness.

These symptoms, in toto or in part, may well lead to a diagnosis of chronic rheumatic disease or chronic arthritis without ever suspecting brucellosis unless tested for properly.

It has been quite definitely proven that the agglutination test may be negative in at least five per cent of the cases. In our experience the per cent of negative agglutination tests will run higher, in the chronic cases at least.

Other diagnostic measures therefore must be used to determine definitely its presence. Those other means are the opsonocytophagic test and the skin test. These two tests may well give information as to whether a patient is actively infected, immune or simply susceptible. Keller, Pharris and Gaub, in their J. A. M. A. article October 24, 1936, bring out this diagnostic procedure very nicely. Utilizing their procedure 50 cases of apparent rheumatic and arthritic disease were tested. Fourteen cases gave positive agglutination tests; 26 gave opsonic index tests of slight to marked phagocytosis to a degree of 0 to 20 per cent; 16 cases yielded 20 to 60 per cent mild, moderate or marked phagocytosis, and eight cases gave 60 to 100 per cent phagocytosis of moderate to marked degree. Of the 50 cases skin tested, 36 gave positive skin tests of mild to severe degree.

The results are best shown in Tables I, II and III.

TABLE I

Determination of phagocytosis activity as reported by Keller, Pharris and Gaub, and adapted from Huddleson, Johnson and Hamann. The opsonocytophagic activity of the blood.

Classification	Number of bacteria per polymorphonuclear cell
1. Negative	None
2. Slight	1 to 20
3. Moderate	21 to 40
4. Marked	41 or more

TABLE II

The diagnosis of undulant fever according to results of the skin, agglutination and opsonocytophagic tests as reported by Keller, Pharris and Gaub, and adapted from Huddleson, Johnson and Hamann.

Agglutination Test	Skin Test	Opsonocytophagic Power of Blood	Status Toward Brucella
Negative	Negative	Cells negative to 20% slight phagocytosis	Susceptible
Negative	Positive	Cells negative to 40% marked phagocytosis	Infected
Positive	Positive	Cells negative to 40% marked phagocytosis	Infected
Negative	Positive	Cells 60% to 100% marked phagocytosis	Immune
Positive	Positive	Cells 60% to 100% marked phagocytosis	Immune

In other words, 31 cases of apparent rheumatic or arthritic disease were diagnosed as cases of active brucellosis, in addition to other diagnoses. Five cases were diagnosed as having acquired immunity to brucellosis.

Of the 31 cases diagnosed as actively infected with brucellosis only 11 cases, or 35.5 per cent, yielded partial or complete agglutination. These 31 cases yielded opsonocytophagic tests and skin tests indicating active infection with brucellosis.

TABLE III

Fifty cases of apparent rheumatic or arthritic disease studied as shown below.

Agglutination Test	Skin Test	Opsonocytophagic Power of Blood	Status Toward Brucella
14 cases positive or complete agglutination		26 cases 0% to 20% mild to marked phagocytosis	14 cases susceptible; 15 actively infected
		16 cases 20% to 60% moderate to marked phagocytosis	16 cases actively infected
	36 cases mild to severe allergic skin reaction	8 cases 60% to 100% moderate to marked phagocytosis	31 cases actively infected; 5 cases immune

A list of symptoms most commonly present in those cases diagnosed as actively infected with brucellosis and the percentage of cases in which these symptoms were noted are:

		Approximate per cent
1.	Arthralgia	100.0
2.	Backache	90.0
3.	Neuritis and neuralgia	48.4
4.	Myositis	32.0
5.	Malaise	38.7
6.	Spondylitis	6.4
7.	Neurasthenia	26.0
8.	Anorexia	38.7
9.	Constipation	77.0
10.	Slight pyrexia	29.0
11.	Headache	61.0
12.	Persistent joint stiffness	26.0
13.	Psychasthenia	3.0
14.	Secondary anemia	93.0

TABLE IV. Detailed report on the fifty cases studied as shown in Table III.

	Skin Test	Opsonic Index	Agglutination	Brucella Status	Other Diagnosis
EH	Negative	16% slight phagocytosis	Negative	Susceptible	Atrophic arthritis
WBH	Negative	16% slight	Negative	Susceptible	Fibrositis
JCH	Negative	24% marked	Negative	Susceptible	Atrophic arthritis
WBP	Negative	8% marked	Negative	Susceptible	Hypertrophic arthritis
WHM	Negative	2% moderate	Negative	Susceptible	Atrophic arthritis
WES	Negative	None	Negative	Susceptible	Atrophic arthritis
CKM	Negative	64% marked	Negative	Susceptible	Atrophic arthritis
MH	Negative	1% slight	Negative	Susceptible	Fibrositis
LBC	Negative	4% slight	Negative	Susceptible	Psychoneurosis; fibrositis
BR	Negative	16% slight	Negative	Susceptible	Hypertrophic arthritis
LR	Negative	Negative	Negative	Susceptible	Atrophic arthritis
NH	Negative	Negative	Negative	Susceptible	Hypertrophic arthritis
PC	Negative	20% slight	Negative	Susceptible	Chr. fibrositis
BDJ	Negative	20% slight	Negative	Susceptible	Psychasthenia
AJB	Positive	16% slight	Negative	Active	Chr. fibrositis
RFC	Positive	16% slight	Negative	Active	Hypertrophic arthritis
GE	Positive	20% marked	Negative	Active	Neurasthenia; chr. fibrositis
EWH	Positive	20% marked	Complete	Active	Chr. choroiditis
CNH	Positive	8% moderate	Negative	Active	Hypertrophic arthritis
JBT	Positive		Partial	Active	Chr. fibrositis
JT	Positive	12% slight	Negative	Active	Hypertrophic arthritis
JGS	Positive	4% marked	Partial	Active	Chr. fibrositis
MD	Positive	8% moderate	Negative	Active	Hypertrophic arthritis
CHH	Positive	12% slight	Partial	Active	Atrophic arthritis
LEM	Positive	None	Complete	Active	Atrophic arthritis
CWI	Positive	20% slight	Negative	Active	Psychasthenia; chr. fibrositis
FEC	Positive	24% slight	Negative	Active	Sciatica
CE	Positive	32% marked	Negative	Active	Atrophic arthritis
MI	Positive	40% marked	Complete	Active	Chr. fibrositis
JH	Positive	40% slight	Negative	Active	Chr. fibrositis
CDM	Positive	28% moderate	Complete	Active	Ankylosing spondylitis
AMM	Positive	20% to 60%	Complete	Active	Hypertrophic arthritis
ELL	Positive	36% slight	Negative	Active	Atrophic arthritis
RAL	Positive	24% slight	Negative	Active	Atrophic arthritis
GT	Positive	32% moderate	Negative	Active	Atrophic arthritis
BF	Positive	27% slight	Negative	Active	Atrophic arthritis
AAL	Positive	28% moderate	Negative	Active	Psychoneurosis
CAW	Positive	40% moderate	Complete	Active	Atrophic arthritis
GWB	Positive	60% marked	Partial	Active	Asthenia; psychoneurosis
WJC	Positive	64% slight	Negative	Active	Atrophic arthritis
HLD	Positive	80% slight	Negative	Active	Hypertrophic arthritis
GJP	Positive	20% to 60%	Complete	Active	Psychasthenia
MO	Positive	45% slight	Negative	Active	Psychoneurosis
POW	Positive	96% slight	Negative	Active	Sciatica
WHS	Positive	52% moderate	Negative	Active	Neurasthenia; salpingitis
BB	Positive	72% marked	Negative	Immune	Atrophic arthritis
GG	Positive	82% marked	Complete	Immune	Atrophic arthritis
AP	Positive	76% marked	Negative	Immune	Atrophic arthritis
CAF	Positive	98% marked	Complete	Immune	Hypertrophic arthritis
RS	Positive	100% marked	Partial	Immune	Atrophic arthritis

Before a case of active brucella infection was so diagnosed, the skin test had to be definitely positive. In addition, the presence of an active opsonocytophagic test in which up to 60 per cent of the neutrophiles were revealing mild, moderate or marked phagocytosis, was required. The presence of a positive agglutination test was desirable. However, a diagnosis of active brucellosis was made even though the agglutination test was not positive in the presence of the above skin and opsonic index tests.

Treatment has been that of vaccine therapy with the brucella bacterine, and general medical measures.

A report on the results of treatment in these cases with the specific bacterine and the effects of such treatment on the opsonic index and skin test as well as agglutination test will be made at a later date.

I desire at this time to give credit to Miss Rita Robinson of the State Health Laboratory, who cooperated with me in compiling statistics for this survey, she doing the agglutination tests and opsonic index tests on all of the cases. I also wish to thank Dr. M. R. Beyer of the State Health Department for his suggestions in respect to paying more attention to this disease as having etiologic significance in many cases of apparent rheumatic and arthritic disease.

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Consideration of the Varied Symptomatology* of the Prostate and Verumontanum

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It is well to consider in the beginning that the symptomatology associated with a prostatitis or prostatic condition cannot be complete without including also the verumontanum and the posterior urethra, because in practically all cases there is an associated involvement of the latter two, just as there is in the kidney tissue with pyelitis. The purpose of this paper is for the consideration and we might say review, of the more common symptoms, and some special attention to the unusual symptoms that arise from the above named tissues. Prostatic hypertrophy will be omitted except where it is referred to as a

*Read before the Section on Genito-Urinary Diseases and Syphilology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1937.

direct association of an inflammatory process.

With the anatomy of the prostate in mind, it can readily be understood why the urethra, seminal vesicles ,and the verumontanum, are so closely related in their pathological conditions. Regardless of which may be primarily involved, the infection will extend through the ducts, posterior urethra, and the minute openings, to result also in an infection of the rest of the group. Also further extension may involve the vas deferens and epididymis, as is commonly the case. With an inflammatory condition in the small ducts and minute openings of these different structures, it may be entirely closed temporarily or permanently, and as a result, absorption of pus takes place in the same manner as it would from an abscessed tonsil.

Locally, chronic infections of these structures are common causes of a persistent urethral discharge, or secretion, especially in the morning, which persists for an indefinite period of time to re-occur, and with acute exacerbations of the chronic process, even after long periods of absence from any subjective or objective symptoms.

Here it is well to consider the rich nerve supply of the prostate and it's associated tissues, which accounts to a large extent for the great variety of symptoms. The principal nerve supply is from the hypogastric plexus, which also supplies to some extent, all the viscera of the pelvic cavity, and is formed by the union of numerous filaments, which descend on each side from the abdominal aortic plexus, and from the lumbar ganglia, being continuous by dividing below into two lateral portions which form the pelvic plexus, often termed the inferior hypogastric plexus. This also enervates the viscera of the pelvic cavity, and is situated along the side of the rectum, giving off many filaments to the rectum. There is a separate plexus which is called the prostatic plexus, which enervates directly, the prostate gland, seminal vesiculae, portion of the posterior urethra, and the erectile tissues. From the above plexuses there are many trunks and filaments, continuous with the nerve supply to practically all of the tisues from the level of the umbilicus to the knees.

Therefore, it is readily seen that generally the symptomatology may be almost unlimited, and from these poorly drained foci of inflammation, septic material, either in the form of infectious emboli or toxins may at any time escape into the circulation, and lodge in the various parts of the body, producing most any systemic manifestation, but especially in the form of disturbances in the synovial membranes, the myocardium, meninges, or eye, or may result in a group of symptoms dependent upon a toxemia which produces mental derangement in the form of neurasthenia in it's broadest sense. The train of symptoms dependent upon prostatic inflammations, and it's associated conditions, varies enough to make up definte groups which may be considered separately.

First: Inflammatory group. This may be characterized by a febrile state, obstinate or intermittent urethral discharge, associated with a varied degree of tenderness, swelling, and distention of the pelvic organs, with one or many of the various systemic conditions resulting from a toxic absorption.

Secondly: The rheumatic or metastatic group, which includes joints, tendons, muscles, bones, and eye lesions, as a secondary inflammatory process.

Third: The pain group. Under this may be included those with persistent perineum pain, sometimes accentuated by defecation and often referred to the rectum, and extremely disturbing to the individual. There may also be associated neurasthenic symptoms, painful erections without sexual stimulus, frequent nocturnal emissions, and associated bloody semen. The great percentage of disturbance of sexual function is the alleged sequence of an inflammatory condition of the prostate and it's associated pelvic organs in practically every case, but is allied rather definitely to the verumontanum. In this group there is usually a history of previous urethritis, obscure pain under the glans penis, along the shaft, in the perineum, over the pubes, in the region of the sacro-iliac joint, down the thighs, or along the sciatic nerve, practically assimilating a sciatica. In short, the pain may be anywhere in the pelvis or the adjacent regions. On the other hand it may amount only to a discomfort or sensation which the patient will not refer to as an actual pain,

then again he may classify it merely as an itching. There may be any degree of pain or discomfort in the form of burning urination, tenesmus, frequency, etc. It may be well to mention here that often times patients who have had their prostate massaged over a long period of time, and the secretions be practically free of pus and these symptoms not having been relieved, until endoscopic treatment with dilatation and direct application to the veru alone, will the distressing symptoms be relieved. There is no doubt that some of the patients who have been termed sexual neurasthenias have been the result of just such conditions, which could have been relieved by thorough examination of these structures for the various conditions above mentioned, because a thorough, systematic, treatment of these will often secure surprisingly good results.

Frequently symptoms of urinary obstruction and irritability find their cause almost entirely in the verumontanum, which is found enlarged, swollen, tender, and at times irregular and cystic. The so-called urethritis cystica chronica. These types of cases are as a rule, only relieved by endoscopic treatments with local applications, puncture, removal, and treatment of the cysts. It is also well to mention that in some patients, with the above conditions, the healing process leaves the patient with a vesicle contracture, which is chiefly the result of the bladder having emptied itself so frequently that it has not been subjected to normal distention, and if this does not take care of itself, after clearing up the condition of the veru, it may be necessary to gradually dilate the bladder by hydraulic distention until it is remedied.

In closing, I would like to say, that rectal palpation, massage, and microscopic examination of the prostatic fluid, are not in themselves sufficient and complete when the patient continues to have symptoms, and these tests show no evidence of pathology, because this is a very sensitive area, and a little pus can go a long ways in causing trouble in such a highly sensitive locality; and in many cases, unless you go further, with endoscopic examination of posterior urethra and verumontanum, to find the cause, treat it, and eliminate it, these symptoms cannot be completely relieved.

Endocrinology; Its Practical Application in Gynecology*

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Introduction

To the average clinician the implication in the title of this paper, "Practical Endocrinilogy," is a paradoxical one. For some time endocrinology has been regarded as a fertile field for research workers, but inasmuch as there is a lag between academic discoveries and clinical application, most practicing physicians have been reluctant to accept or try endocrinological therapy on their patients. This has been a just conservatism from the clinicians' standpoint, especially since the early preparations of whole glandular extracts, dessications, etc., contained so little of the active hormone principle that they were practically inert pharmacalogically. However, since the methods of extraction have improved, the active principles not only identified but also synthesized chemically with their structural formulae becoming known, an added impetus has been brought about so that all branches of medicine are

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necessarily interested. Practically every speciality has a hormonal aspect. The pediatrician explains the brown vaginal discharge of the newborn babe on a hormonal basis. The orthopedist must always keep in mind calcium intake and parathyroid function; the general surgeon has to remove certain glands which produce hormones, as the thyroid; the brain surgeon deals with abnormalities of the pituitary, and so it goes with each speciality. Any one who does not have a working knowledge of the physiology of the endocrine system in their particular speciality will miss the proper interpretation of many maladies therein.

There are several factors which have necessarily impeded the dissemination of knowledge in endocrinology. One is the great confusion in the nomenclature of the hormones and active chemical principles, with the many synonyms for the same hormone. The original discoverer attaches a name as a rule, then others who are first to verify his experiment give a different name. These added to the various drug manufacturers' trade names for the same principle have placed the nomenclature in a furious state of chaos. Recently, however, in regard to the ovarian hormones, Allen, Carver, Butenandt, and Slatta[88] agreed to use the term "*Progesterone*" for progestin, the corpus luteum hormone. Also the A.M.A. council on pharmacy[89] recently took the following action in regard to the estrogenic substances, and the follicular hormone of the ovary, or the so-called female sex hormone. "Accordingly, the council, on the recommendation of the advisory committee, decided (a) to adopt the system of nomenclature based on the root estr-; (b) To retain *Theelin, Theelol,* and *Dihydrotheelin* as synonyms for the compounds known in the aforementioned system as *Estrone*†, *Estriol,* and *Estradiol,* respectively, and (c) To adopt the term *Estrogenic* to describe those compounds or extracts which, in addition to their other physiologic properties, produce estrus, and to adopt the noun Estrogen as the collective term for all the substances having those properties." These rules were made with the courteous withdrawal of trademark rights of some of the drug companies. Further active regulatory participation in the naming of hormones by the A.M.A. council should aid the clinician materially in grasping the essentials and keeping up with the progress in endocrinology.

†Estrone is used as a synonym for Theelin, estrin, etc., in this paper and does not refer to a trade name, or product of any particular drug company.

Another factor which causes great confusion is that of the dosage. This was adequately and impressively brought out by Dr. C. D. Leake[24] of San Francisco, who in his discussion of Mazer and Israel's paper said: "—it might be better to express dosage of that agent (estrone) in terms of milligrams than in terms of rat units. The situation is quite comparable to such a proposition as prescribing morphine in terms of pain-relieving units; no one does that. One should remember, of course, that bio-assay is merely a method of estimating chemical concentration by means of a biologic end-point." Not only is this biologic dosage confusing, but the dosage for each individual patient is based on a clinical estimation (refer to General Principle—B) which requires much clinical experience. Laboratory tests to determine the lack or excess of hormones are still too elaborate and expensive for the general practicing clinician.

The third factor contributory to confusion is that which is brought about by the various drug houses in their descriptive catalogues of their endocrine products. In their haste to be the first to produce and distribute glandular preparations for hormonal therapy, they have included many of such products which have no established value clinically as yet. We have one such catalogue which lists preparations from 22 separate structures of animals, including such structures as tonsils, parotid, and prostate tissue. While this particular company states in the first of their booklets that many of the preparations are not of established value, the busy practitioner who rarely reads it but glances over those preparations which are for sale, gets a very misleading conception of the status of therapy in endocrinology.

While much of the foregoing discussion has been directed toward endocrinology in general, we intend to take up only that part of endocrinology which pertains to gynecology, keeping in mind that this is a necessity for discussion only and that one

must be familiar with all the general principles of endocrinology as well as those pertaining to gynecology.

Novak and others have pointed out that outside of pain the most frequent symptom encountered in gynecology is that of a disturbance in menstruation. When one considers that practically all that is known about menstruation is based on an endocrine interpretation, then one can conceive of the importance of a clear working knowledge of endocrinology to the gynecologist. And the gynecologist who fails to see this will soon fall behind in this rapidly developing, fascinating subject, the therapy in which applies to a great many of his patients in daily practice. The gynecologist interested in menstruation, is concerned with the gonad stimulating hormones of the anterior pituitary gland, prolan A which stimulates the follicular development of the ovary and prolan B which stimulates lutenization; also, the ovarian hormones estrone (theelin, progynon, estrin) which is derived from the follicle, and the progesterone (progestin) which is the hormone of the corpus luteum. Our discussion will then be limited entirely to these hormones, and oftimes they will be spoken of collectively as the sex hormones. A detailed discussion of the physiology and hormonal relationship between the ovaries, pituitary and endometrial development will not be taken up.

While there are many interesting speculative fields being opened up by the chemist with his fascinating structural formulae[1-12] showing the relationship between the sterols of plants, vitamin D, various coal tar carcinogenic compounds, and the sex hormones; and by the far reaching clinicians in their attempts to produce simple methods of contraception[90-91-92-93-95] and sterilization[94-98] by using hormones, no attempt will be made to discuss them. Rather we will adhere to those conditions in gynecology in which definite results have been obtained clinically on the human. Every attempt will be made to leave out, even in the discussion, therapy which has been used on animals only, or therapy of conditions which are still disputed, such as ovarian cysts[100] and Involutional Melancholia[96-97].

Endocrinological Principles

Just as with other forms of therapy, there are certain principles which must be followed. The principles of treatment of general endocrinological disorders also apply to those in gynecology. Thus, we may divide the principles of treatment into general and those pertaining to gynecology. It is assumed that one has a knowledge of the potency and cost of the various commercial products, if economical and effective results are to be obtained. Some of the principles of treatment are:

General[1-2]

A. Glandular function is not restricted to a single gland, but an interrelationship exists between the many glands of internal secretion.

B. Glandular dysfunctions are based on the gland being hyper, or hypoactive, or absent. Therefore, one should try to determine whether the therapy desired should be substitutional, inhibitive, or stimulative.

C. No hormone, when administered, has any direct effect on its parent gland.

D. Adequate vitamins and other necessary food factors are essential to gland function, as iodine, calcium, etc. Vitamin E deficiency interferes with gonadal function, just as lack of vitamin D does with parathyroid, vitamin B with thyroid, vitamin C with adrenal cortex, and vitamin A with anterior pituitary hormone.

E. Methods used elsewhere in medicine are of value, such as good hygiene, adequate rest, treatment of secondary factors, as anemia, etc.

Gynecological[1-5-6-7]

A. Mode of administration: The effectiveness of many of the sex hormones depends on the mode of administration. The most common routes are: hypodermic, percutaneous[8], oral, rectal (enema), and vaginal[9-10] methods of administration. Tachezy[11] treated oligomenorrhea, and amenorrhea, with good results by giving urine of pregnant women as enemas in 100 c.c. doses. Mazer and Israel[12] showed that Theelin given by hypodermic injection is twice as effective as by oral injection when judged by the rate of excretion and absorption. Zondek[8] obtained good results by percutaneous route in treating acne and

suggested its use over joints in arthritis in cases of menopause.

B. The sexual glands are characterized by their periodicity of function in the female as manifested by menstruation, pregnancy, and lactation.

C. The third principle is that of the threshold of effectiveness. Hormone storage apparently does not occur in the body, so that the response of an organ depends upon a minimum hormone level over a period sufficient for such a response to occur.

D. The gonads do not have the power of self-regulation. Zondek has referred to the pituitary as the "motor" of the gonads.

E. Hypophyseal activity is modified by the gonad hormones; there is a reciprocal interaction between the gonads and the pituitary.

F. Frequent pelvic examination with inspection of the vagina and cervix in order to watch for untoward results is also necessary. Inasmuch as the dosage of these sex hormones is a matter of clinical judgement, subject to error, and because adverse reports of side actions are being reported (see contraindications) frequent examination should be made, watching the size and consistency of the ovaries, uterus and cervix. No doctor who does not have his patients willing to submit to periodic pelvic examinations should treat them for any length of time with large doses of gonadotropic or estrogenic hormones. This should be axiomatic until further data proves them to be entirely harmless.

Organotherapy in Gynecology

Of the many gynecological disorders in which hormonal therapy has been tried, there are only comparatively a few conditions in which definite results of value have been attained. These are: gonorrheal vulvo-vaginitis in prepubertal girls, senile vaginitis, the vasomotor symptoms of menopause, pruritus vulvae, functional uterine hemorrhage, primary dysmenorrhea, habitual abortion, and some cases of amenorrhea and sterility. These will be taken up in order, listing the dosage used by various authors.

Gonorrheal vulvo-vaginitis in girls: Lewis[13] in 1933 advocated the use of daily injections of 50 rat units (150 IU) of estrone for a period of as long as two months. He showed that by the use of estrone the epithelial lining of the vagina of the prepubital girl which is very susceptible to the gonococcus could be built up[14] to a close simulation of the postpubertal vagina which is known to be very resistant to the gonococcal infection. Also the reaction of the vaginal secretion is changed from neutral or alkaline to acid[104] which helped. Many were afraid of the harmful effects on the breasts from the occasional swellings that were noted. Also, some felt that the hyperemia of the internal pelvic structures which was produced might favor the ascent of the infection or later on cause some disorder in the menstruation. With the exception of Witherspoon[15] all investigators[16-17-18-19-20-24] have been getting good results with no ill effects. Te Linde[21] and others [19] have obtained better results from the use of vaginal suppositories containing estrone (Amniotin suppositories, 1,000 I.U.) which remove the necessity of so many hypodermic injections, and can be inserted by the mother. The dosage as suggested by some authors are:

A. [20]Estrone 10,000 units intramuscularly the first day, 4,000 units daily by mouth thereafter until the smears are negative (14-18 days). Then give 3,000 units daily for 14 days.

B. [19]Daily use of vaginal suppositories containing estrone 1,000 units for 14-18 days supplemented with oral or hypodermic thereafter.

C. [24]Estrone, 1,000 rat units by hypodermic three times a week for six-eight weeks.

Senile Vaginitis: Davis showed in 1935 that the use of estrogenic substances (amniotin) relieved the ill effects of the atrophic vaginal epithelium with its concomitant, discharge, and burning which is found in postmenopausal life and cases of artificial menopause produced by X-ray, radium, or surgery. Jacoby et al.[23] did not get as good results, but felt that its use was justified. The justification of the treatment with estrogenic substance is based on building up the atrophic epithelium of the vagina. The treatment may have to be repeated from time to time if symptoms recur.

Dosage: [22]500 IU estrone, three times a week for six weeks.

Vasomotor Symptoms of Menopause: While there is no unanimity of opinion on the etiology of menopausal symptoms, it is considered that either the withdrawal of estrin or the hyperfunctional state of the anterior pituitary lobe[24-25-26-27] is the chief factor. Several investigators[25-26-27-31-38] have shown that the amelioration of the symptoms is concomitant with a definite decrease of the gonadatropic factor of the hypophysis. The good results obtained by estrone therapy is explained by Albright[26] in that estrone stops the over production or decreases the production of prolan A.

The menopausal symptoms are many, varied and include besides hot flashes and sweats, headaches, nervousness, insomnia, and fluctuant hypertension. In no condition has the use of estrogenic substances been so valuable and effective. Several early investigators[28-29-30] used folliculin with excellent results. Pratt[34] has been skeptical of his results, however, and tried injections of saline instead of estrogenic preparations without noticing any difference. Not infrequently a low grade fluctuating hypertension has been noted in the menopause. Liebhart reported excellent results in controlling this by the use of estrogenic substances. However, others [25-36] reported poor results and were unable to duplicate Liebhart's work. Shaefer[37] reports that with the use of two c.c. of aqueous Theelin three times a week the hypertention was held in abeyance. In spite of a few controversial reports in regard to the results with particular symptoms, the use of estrogenic substances has been a very valuable form of therapy in menopause. The treatment need only be used periodically when the symptoms are worst, so that continuous treatment is not necessary. The dosages as used by several investigators are:

A. [24]Estradiol benzoate 10,000 rat units hypodermically every fourth day until the major symptoms subside. Then gradual withdrawal of the medication.

B. Novak[6] gives estrone (Theelin) 1,000 IU hypodermically every day, or every other day until symptoms are relieved, then gradual withdrawal of the hypodermic medication and changing to oral tablets.

C. [38]Frank finds that estrone in hypodermic doses of 4,000 R. U. on alternate days until a total of 24,000 R. U. has been taken is satisfactory. He finds that the relief is not permanent.

Migraine[39-40]. Glass[39] finds that a total dosage of 8,000 to 32,000 IU of estrone gives relief of headaches for a period of six to 36 months.

The use of vaginal smears[57] has been suggested as a clinical laboratory test of the results of the use of estrone in these cases of menopause.

Pruritis Vulvae[106-110]: Kaufman[41] used injections of estrogenic substances in a case of pruritis vulvae which had menopausal symptoms, also with excellent results.

Functional Uterine Hemorrhage: The endocrinological disorders of uterine bleeding have been known to be due to the ovarian dysfunction of a failure of ovulation[52-6], with abnormal persistence of estrin stimulation and absence of progesterone effect since corpora lutea are not formed. This is associated with a hyperplastic endometrium[58-59]. Progesterone is employed along with Antuitrin "S." Wilson and Kurzrok[42] attribute the effectiveness of these substances to their action on the anterior pituitary causing an inhibition of the bleeding hormone. Therapy is directed toward stimulating the formation of corpora lutea by giving the luteinizing factor of the anterior pituitary (prolan B) and substitution therapy of progesterone.

A. Progesterone[6] 1 R. U. is given by hypodermic for one to six doses if the bleeding is menorrhagic in type. These injections are started as soon as the menstrual flow starts. If the bleeding is of metrorrhagic type, Antuitrin "S" is given in doses of 200 R. U. for several injections before the progesterone is started.

B. We use the combination of Antuitrin "S" and progesterone in the menorrhagic type of bleeding.

Primary Dysmenorrhea: Reynolds has shown that in general, with an increase in estrone, there is an increase in rhythmic activity of the uterus while progesterone is the normal inhibitant. Based on this conception the endocrine therapy has been directed towards the administration of pro-

lan B (Follutein, Antophysin, Antuitrin "S") and progesterone. The results have been very unsatisfactory previous to the chemical synthesis of progestin by Butenandt in 1934. However, clinicians using the newer preparations since show that this is a valuable form of treatment in selected cases. Israel[43] made a careful study and along with Campbell[44] who used corporin, and Browne[45] and Witherspoon[85] who used follutein obtained good results but only for a short duration. They found that there was no assurance of permanent relief. Elden[46] using progesterone, obtained good results and observed no delay in the menstruation or change in the character of the succeeding periods. These authors use the following dosage:

A. [6]Progesterone one rat unit, or pregnancy urine preparations (Follutein, Antuitrin "S," Antophysin) 100-200 units as daily intramuscular injections beginning three-four days before the period and continuing until the flow is well established.

B. [36]Progesterone 2/25 to one R. U. three-six days before the period in a single or divided doses.

C. [24]Estrone with poor results.

Habitual Abortion: Whereas previous results with corpus luteum extracts, and residue have been of questionable value, the newer preparations which have been marketed since the chemical synthesis of progestin (progesterone) are encouraging. Kane[47] reported unusual success in 36 out of 40 cases with progesterone.

Dosage: [1-6]Progesterone 1/5 to 1 rabbit unit two-three times a week as soon as pregnancy is definitely established and continued past the period when the previous miscarriages occurred.

Amenorrhea: Several investigators[53-54-55-24-6-107-48-50-51-52] have been able to produce menstruation in cases of amenorrhea and even in castrated women after Kaufman[49] was first able to show that it could be done. However, it requires massive doses of estrin and progesterone to accomplish this and there is no assurance that it will be permanent, but a repetition of the treatment may be necessary for each menstruation. Amenorrhea may be classified[60-51-55] into several groups based upon lack of proper function of the ovarian hormones and, or the gondatropic hormones which stimulate the ovary to their production. Several clinicians use the following dosage:

A. [6]Estrone 10,000-20,000 IU, intramuscularly daily or every other day for 6-10 doses. Thyroid therapy can be used in addition.

B. [24]300,000 rat units of estrone in three divided doses and repeated monthly yielded 20 per cent results.

C. [51]Dosages of estrone 100,000 R. U. are usually required to bring about the first menstruation in primary Amenorrhea and about 50,000 R. U. in secondary Amenorrhea.

D. [53]In a castrated woman: Estrone 50,000 rat units and 12 to 14 rabbit units of progestin produced bleeding.

With doses of this magnitude it is a question whether the unmarried girl should take them if she feels well, since her sexual glands have had only a partial test of their function.

Sterility: Very little of the endocrine factors involved in certain cases of sterility is known, especially since Novak has discovered that many of these girls have an anovulatory menstruation. We do not know yet just exactly which endocrine factors cause ovulation. However, there are three glands[56] the hypofunction of which are responsible for most sterilities; anterior pituitary, ovaries, and thyroid. They are listed in descending order of frequency, the pituitary being the most frequent offender.

Endometrial biopsies according to Novak's suction curette technique[71] aids materially in diagnosing the ovarian sterilities. If the endometrium[109] shows evidence of proliferation without a secretory stage then one can conclude that there is an absence of progesterone which in turn shows the absence of a corpus luteum and therefore ovulation has not occurred.

The treatment is directed toward the correction of the under-functioning gland at fault. Thyroid seems to be of value in small doses in all types of sterility based on a hormonal disturbance.

Some investigators[61-62] have reported good results from the use of estrogenic substances (Progynon B) in doses of 100,-

000 to 500,000 IU given intramuscularly on the ninth to eleventh day of the cycle. Others[56] feel that ovarian hormones are contraindicated inasmuch as these hormones cannot stimulate (rule in endocrinology) their parent gland (the ovary) into activity, and inasmuch as some reports have been made on the harmful effects in animals on the parent gland there is no hope in this therapy. These same observers feel that the use of the gonadotropic hormones (Prolan A and B) may aid in stimulating the ovary and be of some benefit in the treatment of sterility. The treatment as suggested by several authors is:

A. [9]Thyroid in small doses. Gonadotropic hormones of the anterior pituitary (Prolan A and B).

B. [56]Progesterone and Estrone are contraindicated. Anterior pituitary hormones are of value.

C. [24]Mazer used 30,000 to 430,000 R. U. of Estradiol Benzoate on each of four cases over a period of one-two months as treatment for amenorrhea with subsequent conception following withdrawal of treatment.

There are several additional conditions in gynecology in which good results from sex hormonal therapy are being obtained, and are worthy of mention: Hypoplasias of the uterus[63-64], "Mazoplasis" or adenosis of the breasts[65-66-67-68-24-6-79-101-102-103] excessive lactation post-partum (24 - Discussion[105]) and more recently Schneider[69] has described a syndrome indicative of estrogenic deficiency. No attempt has been made to discuss other conditions outside of gynecology in which estrogenic therapy as well as the gonadotropic hormones have been used efficaciously, such as acne, cryptorchism, and David's disease.

In closing there are some points worthy of reiteration, namely that while no stress has been made on the use of other glandular therapy in conjunction with the sex hormones one should remember that it is often necessary. Of all glandular therapy, thyroid extract has been the most reliable and beneficial as stressed by Novak[9] and Hoskins[70]. Thus, the possibility of other glandular disorders must be kept in mind when treating gynecological patients.

A word in regard to the contraindication to the use of the sex hormones might not be inapropos before closing. It is known that thyroid and the estrogenic hormones have an antagonistic reaction (Year Book of Obstetrics and Gynecology, 1936). Aside from this, side reactions[72] such as urticaria, parotitis, anaphylactic shock, and generalized dermatitis have been reported. Witherspoon[73-74] points out that an excess follicular hormone may be a common etiological factor in hyperplasias of the endometrium, uterine fibroids, and endometriosis. This theory is supported by the fact that fibroids do often increase rapidly in size during pregnancy[75]. Bauer[76] disagrees with this belief, however. Loeb[77] and Novak[78] discuss the estrogenic hormones in relation to the carcinogenic hydrocarbons. Hofbauer[80] demonstrated changes in the cervical epithelium in the form of hyperplasia, and metaplasia by injection of female sex hormones. This was confirmed by Philip Smith and Engle. Watson[81] cautions the use of all sex hormones during the reproductive period. Some authors[87-99] state that women who have been treated for carcinoma of the breast, and carcinoma elsewhere in the body should never be given ovarian hormones.

Damm[82] advises that all large doses of estrin should be followed by progestin. In animals (rabbits) Zondek[83] found a glandular cystic hyperplasis of the endometrium and atrophy of the uterus by prolonged use of estrin. Mazer[84] found no effects from doses of 100,000 to 200,000 units of estrogenic principle given to women over a period of two-three months on the weight, B. M. R., blood pressure, blood count, coagulation time, bleeding time, urine and blood chemistry. The only conclusions that one can draw from the foregoing reports is that while the sex hormones are proving to be of definite clinical value, care should be taken in their use. A definite indication should be present, and they should not be regarded as just something else to try if other things do not work. A very appropriate word of caution was made recently in an editorial in the J. A. M. A.[86] "Rather are they (the editorial comments) intended (a) To emphasize that there is a great discrepancy between laboratory knowledge of the hormones and their clinical application, (b)

To suggest that for the present only those clinicians with facilities for critical study be encouraged to administer the new endocrine preparations to patients and that these clinicians be urged to publish their negative results as well as their positive results, and (c) To suggest that a large group of physicians not represented in either of the groups mentioned cease their undiscriminating injection of u n k n o w n substances into unsuspecting patients."

In spite of this warning, one should not have a futile aspect towards endocrinology. Dr. Novak has made the comparison between the present status of endocrinology and that of the cancer problem. He points out that even though we know little about the etiology of cancer, still the most cynical clinician does not feel that a careful familial history for cancer, a biopsy and pathological examination of the tissues along with the best known methods of therapy X-rays, and radium is not worthy of trial. The same enthusiasm and diligence should be applied to gynecological endocrinology, bearing in mind the safeguards which have been mentioned previously.

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The Relative Value of the Various Methods of Diphtheria Immunization

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The value of diphtheria immunization is unquestioned by the medical minds of today, but there is still some question and uncertainty about the best method of producing this immunity; i.e., the method which will result regularly in the maximum percentage of permanent immune patients with a minimum of injections and unpleasant reactions. The high incidence of susceptibility in children, especially those of pre-school age, has led to the general acceptance of the view that preliminary Schick testing in pre-school children is unnecessary, and that all pre-school children, excepting those showing decided allergic tendences, should be given the benefit of active immunization against diphtheria routinely. This immunization should not be given before the sixth month of life as the infant possesses a natural immunity acquired from its mother up until this time. This immunity is gradually lost after the fifth-sixth month, and in view of the fact that about 80 per cent of the cases of diphtheria occur in the pre-school group (six months to six years) the sooner this immunity can be given after the sixth month, the better it is, as only in this way. can a child be given the protection during this hazardous period, and in addition unfavorable reactions, especially with toxoid, are rarely if ever seen in children at this age.

At the present time there are three accepted methods of actively immunizing a child against diphtheria.

TOXOID

By giving two to three, 1 c.c. doses of diphtheria toxoid (Ramon's anatoxin) with interval between injections of three weeks. This method may be used routinely in all children under six years, since they seldom if ever manifest other than slight local reactions. Older children and adults show more local and general reactions. Therefore, if this method is used in the older group it is advisable to test them by injecting 0.1 c.c. of the anatoxin intradermally. If no urticarial wheal appears at the site of injection within a period of 15 minutes, then the 1 c.c. immunizing dose may be given. If an urticarial wheal appears at the site of injection, no further injection should be made until three days have elapsed, and then the doses should be modified as follows: the first dose on the third days should be 0.1 c.c., then 0.25, 0.5, 1 and 1 c.c. should be given at intervals of one week.

ALUM PRECIPITATED TOXOID

The desirability of minimizing the number of injections necessary for the immunization of young children prompted a number of investigators to undertake the development of material capable of producing active immunity after a single dose.

The manner in which immunization is accomplished with alum precipitated toxoid is dependent upon its slow absorption, and some investigators believe the one dose toxoid is able to maintain a more or less continuous antigenic stimulus, extending over a period corresponding to that of two doses of the Ramon toxoid. On the other hand, there is a dissenting minority who, while admitting the desirability and advantages of a single injection, have presented conclusive evidence that the protection effected by a single dose of 1 c.c. of alum precipitated toxoid is not of sufficient permanency to justify the continued use of a single dose as the method of choice.

Pansing and Shaffer[1] made an accurate and reliable study on a group of school children in Ohio. An analysis of the data on this group indicated that a very high immunity results from one dose of 1 c.c. of alum precipitated toxoid by the 28th to the

60th day after innoculation as evidenced by a negative Schick test. A further analysis of data on these same children indicated that 57.8 per cent of them had lost protection at the end of two years as evidenced by a positive Schick reaction. They also found that a second injection of alum precipitated toxoid offered protection to the 57.8 per cent of children who had lost their immunity at the end of two years.

More recently Jean V. Cooke[2], of Washington University, St. Louis, in a study of 1,000 adult student nurses immunized by T.A.T., toxoid and alum precipitated toxoid over a period of 18 years, found that the most effective procedures were two injections of alum precipitated toxoid with an interval of several months between, or three injections of plain toxoid with intervals of several weeks between the doses.

This tends to confirm the well known experimental observations that the immunity following the first or "primary" response to diphtheria is feeble and transient, but the "secondary" response following a later antigen stimulus results in rapid, pronounced and persistent antitoxin formation. It would appear, therefore, that those who become immune following a single injection or series of injections have already responded previously to the diphtheria antigenic stimulus, such as occurs in the development of "natural immunity," and develop the permanent immunity characteristic of secondary stimulus. On the other hand, those who have not reacted previously to the diphtheric antigen, and consequently do not become immune following a single injection or series of injections, will require a second immunization.

It should be emphasized that there are certain individuals who are absolutely incapable of responding to any antigenic substance. They are referred to as being immunologically inert. Fortunately, however, the percentage of persons incapable of developing immunity is very small.

Toxin Antitoxin

Many continue to favor the use of toxin antitoxin in the immunization of older children and adults, because of the fact that it is said to give fewer reactions. The procedure is to administer three successive injections of toxin antitoxin in doses of 1 c.c. each, given at intervals of from one to three weeks. It should be remembered, however, that toxin antitoxin contains some horse serum to which the patient may be sensitive, or develop a sensitivity following this administration of the toxin antitoxin mixture.

Schick Test

Material for the Schick test consists of diphtheria toxin diluted in peptone, and can be purchased commercially, and is stable for a period of months. Experience indicates it is as reliable as freshly diluted toxin and its use is recommended for general use. To perform a Schick test 0.1 c.c. of the diluted toxin (representing 1/50th of M.L.D. of toxin) injected intracutaneously in the flexor surface of the forearm at the junction of the upper and middle third. The Schick test should be read at the end of 72 hours. A positive reaction consists of redness, edema, and possibly induration, 1 cm in diameter or larger. This signifies lack of immunity. If the test is negative it should be read again on the seventh day. A control test may be performed on the opposite arm if desired. Similarly diluted toxin heated to 176° F. for 10 minutes is used for this purpose. Practically a control test is unnecessary in the younger age groups, where pseudo-reactions seldom occur.

This following report summarizes the results of 3,203 immunizations against diphtheria in pre-school children over a 12 year period with the use of the different antigens.

Year	Serum	Number Doses	Number Given	Number Schicked	Number Positive
1925-26	T.A.T.	3	193	43	0
1927	T.A.T.	3	272	229	8
1928	T.A.T.	3	286	146	8
1929	T.A.T.	3	147	68	6
1929	Toxoid	2	64	37	0
1930	T.A.T.	3	78	27	1
1930	Toxoid	3	83	41	3
1930	Toxoid	2	23	4	0
1931	T.A.T.	3	123	42	0
1931	Toxoid	3	744	283	9
1932	Toxoid	3	298	104	7
1933	Toxoid	1	6	4	0
1933	Toxoid	3	341	87	9
1934	Toxoid	3	179	97	2
1935	Alum Toxoid	1	12	10	5
1935	Toxoid	3	205	142	2
1936	Alum Toxoid	1	139	49	0
TOTALS			3,203	1,413	60

Approximately 4½ per cent positive.

Conclusions

1. No immunization program is complete without the follow-up Shick test, as

many lay people have a false security in thinking their children are 100% protected after the immunization is completed, when in reality we know a definite percentage is still susceptible to diphtheria.

2. It would seem that efforts to simplify the technique of diphtheria immunization to a single dose of antigen has led to a sacrifice of reasonable permanency of immunity for greater convenience of administration.

3. Past experience indicates that the use of the two or preferably three doses of plain toxoid given at intervals of several weeks, or the administration of two doses of 1 c.c. each of alum precipitated toxoid given with a 60-day interval between them is better than running the risk of a child losing its protection too soon after the administration of the single dose of the alum precipitated toxoid, and are the methods of choice at the present time.

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Further Experience With Prostatic Resection*

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The trouble in prostatic obstruction is caused by those portions of the gland which project into the bladder and urethra. By prostatectomy the whole gland is removed in order to relieve this obstruction. By resection it is possible to remove the obstructing portions only. This is possible in all cases except those in which the resectoscope cannot be introduced and in the occasional huge glands, which amount to less than 10 per cent. Following a properly done resection the patient voids a full, free stream and empties his bladder so that the results are excellent and permanent in the vast majority of cases. By fulfilling the above requirements the operation can be called anatomically and physiologically correct.

Preliminary preparation has proven its worth over many years in prostatic surgery and I deplore the tendency in some quarters to get away from this proven safety factor. In the last 100 cases under my care two deaths followed immediate operation and one other after insufficient preparation. So in all but the hale and hearty I practice preliminary preparation. Catheter drainage has been used entirely and in no case has cystotomy been necessary.

*Read before the Genito-Urinary Section, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1937.

At first I did vasectomy routinely, then in 75 cases I did not. While only four developed epididymitis, one had a severe disability lasting three months with loss of the testicle from abscess formation. Another developed huge abscesses of both testicles which contributed materially to his death one month after resection. I am, therefore, again doing vasectomy in all cases except the younger men. This is done at the same time as the resection. No case of epididymitis has developed from an indwelling catheter.

As to the operation itself, much has been written but points which to me seem important have not been emphasized. After the sheath is introduced, the bladder neck is carefully examined with a retrograde telescope to determine the amount and location of intravesical protrusion of the prostate. The operating unit is then introduced. This is equipped with the latest foroblique telescope (No. 68A) which gives much greater magnification and a wider field of vision than the original telescope. Resection is then carried out layer by layer, for it is then easier to tell when the level of the floor of the bladder is reached. The intraurethral portions are then removed to just below the level of the verumontanum, which of course is kept inviolate. In

making all cuts the sheath is pressed firmly against the tissue, so that a deep bite is obtained; otherwise, the loop will ride up and out and a thin shaving will be the result. Cutting tissue near the veru is delicate work and it is usually necessary to cut away from it toward the bladder. The next point I consider very important: the sheath is withdrawn to the veru, carefully centered and then turned first clockwise then counter-clockwise, and as long as tissue falls into the sheath it is removed, for otherwise it would later on fall into the urethra and cause further obstruction. This, of course, requires cutting clear around the clock, but when it has been done one can be fairly certain that all of the obstructing tissue and usually much more has been removed. A finger is then inserted into the rectum and the prostate massaged against the sheath. This will sometimes express more tissue out where it can be removed. Bleeding points are systematically sought out and coagulated with a strong, hot spark. The new telescope is a great aid in finding these quickly. It is very important that at the finish the irrigating fluid return clear, for I am firmly convinced that the time to stop hemorrhage is at the time of operation. The area is then inspected with the retrograde telescope, and any remaining tissue projecting into the bladder is located and then removed. There is now a wide, cone-shaped opening where the prostatic urethra was, with its apex at the veru, and base at the neck of the bladder, and one is fairly certain that there is no longer any obstruction present. A 22F retention catheter is then placed in the bladder. Following the advice of Alcock and others, no case is kept on the operating table more than one hour. If there is more tissue to be removed, this is done a week later. This has been necessary in five per cent of my cases.

In the post-operative care fluids are forced by mouth, or by needle if necessary. The catheter must be kept open by frequent irrigations, the solution being injected and withdrawn each time by suction with a piston syringe, for a bulb syringe has not the power to withdraw clots which may form, and the bladder must be kept empty. If it overdistends hemorrhage may result, or severe chills and high fever. As soon as the urine becomes clear, irrigations are discontinued.

At the end of a resection, there is a wide area of raw surface in a closed sac bathed in urine which is usually infected. Even with continuous drainage there is bound to be a slight absorption, which I believe is the cause of the post-operative rise in temperature which nearly always occurs. This raw surface quickly seals over so that the temperature returns to normal usually within 72 hours. The catheter is removed in 96 hours, or 24 hours after the temperature returns to normal, if it should be elevated for a longer time.

There has been no post-operative hemorrhage, immediate or late, in more than 100 consecutive cases under my care. I attribute that partly to luck but more to the fact that complete hemostasis in each case was obtained at the time of operation, and that the catheter was kept open afterward.

When the catheter is removed the patient should void a full, free stream at once and be proud of it. On checking the residual urine it should be less than 50 c.c. The two go together, and if this is not the case the resection is incomplete and the result will not be satisfactory. So instead of waiting and hoping for several months and then having to reoperate eventually, I now reoperate within a week and in each instance have removed considerable more tissue, usually from overhanging lateral lobes. A second resection has been necessary in eight per cent of the cases. Rotation of the sheath at the level of the veru in the first operation has largely obviated the need for a second one by revealing the overhanging laterals at that time. There has been only one definite recurrence, occuring four years after the first operation. In all other cases reoperated on later, the trouble was due to not removing enough tissue the first time.

If the temperature is normal for two days after the catheter is removed the patient is allowed to leave the hospital. Occasionally after that there is a rise in temperature, poor appetite and signs of septic absorption. The prompt reinsertion of a retention catheter and bladder irrigations has corrected this in less than a week in all cases.

What is the appearance of the operated

area later on? An autopsy was obtained in one case in which death had occurred 60 hours after resection. The patient, age 79, general health good, NPN 42 with 120 c.c. of residual urine, was operated on without preliminary preparation. Thirty-nine grams of tissue was removed in one hour. Bleeding was more than usual but controlled readily. Complete suppression of urine developed with death in 60 hours. In removing the ureters, bladder and prostate, the surrounding tissues were found normal; the ureteral orifices, base of the trigone and verumontanum were intact; the prostate was found to have been completely removed down to the capsule, except for a small amount of tissue just behind the veru. The operated area had a healthy pink color and no area of coagulation was visible. One case had cystotomy for stone 15 months after resection. There was a visible cavity present at the bladder neck into which the index finger was easily inserted. The majority of patients have been cystoscoped one or more times from two months to several years afterward and the cone-shaped opening appears to be permanent. In other words, instead of a prostatic urethra, there is a prostatic cavity which is continuous with, and to all intents and purposes a part of, the bladder.

There has been an almost complete absence of burning and frequency afterward. They get up not at all or not more than three times at night and void promptly, quickly and completely.

In the last 100 cases under my care there have been five deaths. Sixty-five grams of tissue was the most removed in one case—44 grams in one hour and 21 grams a week later. In 28 cases more than 25 grams was removed. During the same period I performed two prostatectomies.

Prostatic resection is a difficult, delicate and technical procedure, but when done properly the results are uniformly satisfactory and lasting in the vast majority of cases. Like many others I have had my troubles and worries, but nothing has given me more satisfaction than, time after time, to see a grave surgical risk of advanced age come through the operation without shock or discomfort, and be alive and enjoying life two or three years later.

Many Physicians and Their Families Will "See America" En Route to the Convention in San Francisco

Officials of this Society were pleased to learn from the American Express Company, Official Transportation Agents for the Convention tours, that they have already received a very excellent response from physicians and their families, which indicates that the San Francisco Convention will be a great success. It is recommended that members of this Society who intend to participate in the Convention apply at an early date to the American Express for their tour reservations, as this will assure them of receiving the type of pullman accommodations they desire.

This is the first time that the physicians have been offered the facilities of de-luxe special trains visiting the scenic attractions of the west, at a very nominal all-expense cost from your home city. Traversing a route that contains many wonders, one's particular preferences are bound to be among them. For instance, the Indian Pueblo District with its remnants of an ancient civilization long vanished from this continent. The Grand Canyon offers its grandeur of scenic attractions. Southern California, its glowing, sun-filled cities and orange empires, Spanish Missions, Catalina Island and the Pacific rolling up to the edge of white sands. That is the route to San Francisco and the Convention.

Returning, there is a choice of two routes. One includes the charming cities of America's Northwest: Portland, Seattle, Victoria, Vancouver and the majestic Canadian Rockies and its resorts. Route Two winds through Yellowstone National Park and its world-famous geyser region, through Salt Lake City, and the scenic beauties of the Royal Gorge, Colorado Springs and the mile-high city, Denver.

That is but a rough outline of the itineraries offered to physicians planning to attend the Convention this June. These special train tours are restricted to physicians, their friends and families, and have been made possible through the united interest and support of 25 state medical societies which makes it possible to offer the tours on an economical, all-expense basis. This is an ideal opportunity to enjoy a wonderful vacation with your family and in the company of friends and colleagues in the Society and in other state Societies.

Recent Statement by the Judges of the Mead Johnson Vitamin A Award

"The Vitamin A Award offered by Mead Johnson & Company was supposed to be made on the basis of papers published or accepted for publication by December 31, 1936. The judges of this award, meeting in New York, June 4, 1937, feel that its presentation at this time is not warranted since no clinical investigation on vitamin A has yet been published which completely answers any of the objectives of the original proposal. The judges, therefore, agreed to defer further consideration of the granting of this award until December 31, 1939. This action was taken because of the existence of pronounced differences of opinion among investigators as to the reliability of any method yet proposed for determining the actual vitamin A requirements."

Statement by Mead Johnson & Company

In view of this action by the judges of the Mead Johnson Vitamin A Award, and as an earnest of our good faith in the matter, we have segregated from our corporate funds on deposit with the Continental Illinois National Bank & Trust Company of Chicago, the sum of $15,000. This cash deposit has been placed in escrow and will be paid promptly when the board of judges decides on the recipient of the Main or Clinical Award. The Laboratory Award of $5,000 was made on April 10th, 1935.

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Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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EDITORIAL

FORTY-SIXTH ANNUAL MEETING

Since the organization of the Oklahoma State Medical Association there has never been a more attractive program presented than the one published in this issue of the Journal. Our Guest Speakers, Doctors Frank C. Neff, Kansas City; William S. Middleton, Madison, Wisconsin; and Edward H. Ochsner, Chicago, are international authorities on the particular subjects they present and their special ability to present these subjects will make their presentations not only instructive but interesting.

The Scientific Programs of the various Sections have been prepared with careful attention as to their timeliness and acceptability of the subjects, and many of the leading physicians of the state have allowed their names to go on the program and will be prepared to give to the Sections material well worth while.

The officers of the Association will have many things of importance to consider. The Council and House of Delegates will have many important decisions to make, consequently each delegate should make it a point to familiarize himself with the various questions that will be presented and see to it that he is in his place on time at the meetings of these important bodies.

The Medical Profession of Muskogee County has put forth every effort to make this meeting enjoyable. There will be ample hotel facilities to care for the crowd. The Golf Tournament, Tour of Inspection of the Veterans Hospital and Fort Gibson, together with the President's Reception and dance will contribute to enjoyment of the time spent in Muskogee.

No matter how far you may live from the meeting place you can ill afford to miss this very important meeting and participate in the programs and discussions.

Editorial Notes—Personal and General

DR. WANN LANGSTON, Oklahoma City, attended the College of Physicians Postgraduate Course in Cardio-Vascular Diseases in Philadelphia, in March, and the meeting of the College in New York in April.

DR. JOSEPH FULCHER, Tulsa, announces the opening of his office at 210 Medical Arts Building.

DR. E. P. HATHAWAY, Lawton, has been appointed County Health Superintendent of Comanche County.

DR. GEORGE A. KILPATRICK, McAlester, recently made an extensive tour of the medical centers of the Pacific Coast.

DR. E. K. WITCHER, Tulsa, announces the opening of his office for the practice of Internal Medicine, 511 Medical Arts Building.

DRS. PHIL McNEILL and R. Q. GOODMAN, Oklahoma City, were guests of the Pittsburg County Medical Society, Friday, March 18th, at their monthly meeting, in McAlester.

DR. J. C. REYNOLDS, Frederick, is reported ill in Rochester, Minn.

DR. E. S. CROWE, Olustee, attended the Dallas Clinical Society in Dallas, in March.

DR. HARRY R. CUSHMAN, Clinton, has been appointed County Health Superintendent of Custer County.

Oklahoma Pediatric Society

The Board of Directors of the Oklahoma Pediatric Society have decided to have the annual meeting of the Society in the fall instead of with the state meeting. There will be a short business meeting after the program of the section on Pediatrics.

Alpha Epsilon Delta Convention

The Fifth Biennial Convention of the Alpha Epsilon Delta Honorary Premedical Fraternity was held at Chapel Hill, North Carolina, March 24-26. The North Carolina Beta Chapter, at the University of North Carolina, acted as host to 85 visiting members and delegates from 21 chapters in 14 states.

One of the most important reports to the convention was the success reported by the various chapters for their social hygiene programs among the college students. Many of the chapters have well conducted programs on mental and social hygiene for the students. Two of the high points of the convention were the illustrated lecture by Dr. Addison G. Brenizer of Charlotte, N. C., on "Surgical Anatomy of the Thyroid Gland and Thyroidectomy," and the address by Dean Wm. deB. MacNider, of the University of North Carolina Medical School, on "The Biologically-Minded Physician," at the convention banquet Saturday evening.

The Oklahoma Alpha Chapter of Alpha Epsilon Delta is located at the University of Oklahoma.

Officers elected to the Grand Staff were: Grand President, Dr. Charles F. Poe, Professor of Chemistry, University of Colorado; Grand Vice-President, Dr. K. P. Stevens, Professor of Biology, Central College; Grand Secretary-Historian, Dr. Maurice L. Moore, Drexel Hill, Pa.; Grand Treasurer, Dr. Warren H. Steinbach, Professor of Chemistry, University of Arkansas. Members elected to the Executive Council were: Dr. Emmett B. Carmichael, School of Medicine, University of Alabama; Dr. H. R. Henze, Professor of Chemistry, University of Texas; and Dr. R. W. Bost, Professor of Chemistry, University of North Carolina.

News of the County Medical Societies

MUSKOGEE County Medical Society had as their guest of honor Dr. Robert U. Patterson, Dean of the Oklahoma University School of Medicine, on March 21st, at their monthly meeting held in Muskogee.

OKMULGEE-OKFUSKEE County Medical Societies held their monthly meeting in Okmulgee March 21st with the following program: "Toxic Goiter," illustrated with lantern slides, Dr. J. C. Brogden, Oklahoma City. "Diaphragmatic Hernia," (X-ray Findings) by Dr. E. G. Hyatt, Oklahoma City.

News Notes of Woman's Auxiliary

Women's Auxiliary to Woodward County Medical Society Elects Officers

The Women's Auxiliary to the Woodward County Medical Society at its annual meeting held at the Baker Hotel in Woodward elected the following officers for the ensuing year: Mrs. D. W. Darwin, president; Mrs. T. C. Leashman, vice-president; Mrs. C. W. Tedrowe, recording secretary; Mrs. O. C. Newman, treasurer; Mrs. H. K. Hill, corresponding secretary. Dues were paid. Other business was shortened that the invitation to meet with the Medical Society might be accepted.

A seven o'clock turkey dinner was enjoyed by all.

An interesting and instructive paper on, "Socialized Medicine" was read by Dr. C. J. Fishman of Oklahoma City. Dr. Basil Hays of Oklahoma City gave an illustrated lecture on "Urology." This lecture received comment from several of the doctors present.

It may be of interest to some who read this report to know that the organization known as "Woodward County Medical Society" is composed of members from Beaver, Ellis, Harper and Dewey Counties as well as from Woodward County. Wives of members of the medical society are eligible to membership in the women's auxiliary.

So far as we know, this society and auxiliary embrace the largest area in the state, organized under one unit.

Mrs. J. C. Duncan, Publicity Chairman.

OBITUARIES

JOSEPH ALEXANDER MILROY

Dr. Milroy passed away at his home in Okmulgee the evening of February 7, at the age of 67. His wife, children and a few close friends were at his bedside when the end came.

The doctor had been suffering with heart disease for a number of years, but did not give up active practice until the two or three years passed. The last county medical meeting he attended, a year ago now, he said would no doubt be his last meeting with his doctor friends.

Dr. Milroy was born in Northwood, Ohio, April 15, 1870, where he attended public school, grew up and went to Geneva College, after this graduating from the old Starling Medical College now the Medical College of the State University. His first two years' practice was at Lakeview, Ohio, after which time he came to Oklahoma, stopping for awhile at El Reno hoping to draw some of that land thrown open to settlers. Failing in this quest he rode horseback to Okmulgee in 1901, settled down and remained in the practice of his chosen profession there until the time of his death—36 years. He married an Okmulgee girl, Miss Florence Weirick, in 1906. From this union came six children, five boys and one girl, all grown but one.

The deceased was a useful citizen and successful doctor, a member of the Presbyterian church, a church he helped to organize in the early days of Okmulgee. He assisted very materially in the erection of the present magnificent church now standing at the corner of Ninth and Seminole streets. From this church his funeral was held. Dr. A. E. Bleck, the pastor, officiating, assisted by the Rev. E. L. Watson, pastor of the First Baptist church of Okmulgee.

Mr. President, your committee feels very keenly the loss of a good citizen and close associate in medicine, we being among the oldest physicians left in Okmulgee. We suggest this simple resolution be placed in the records of the Okmulgee County Medical Society, a copy sent to the Journal of the Oklahoma Medical Society for publication, and one sent to the family:

First, That the doctor's cheerful and happy disposition in administering to the needs of the sick and afflicted of Okmulgee County, often without compensation, has been an inspiration to the profession and a benediction to all the people. This we feel is worthy of emulation,

Second, That our sympathy is hereby extended to the family and all who mourn his loss.

Committee: L. B. Farmer,
W. C. Milchener,
S. B. Leslie.

PROGRAM

Forty-Sixth Annual Session of the Oklahoma State Medical Association at Muskogee, May 9, 10, 11, 1938

GENERAL INFORMATION

Headquarters—Severs Hotel, Telephone 4900.

Registration, Scientific and Commercial Exhibits—Basement, Severs Hotel. All physicians, except those outside the state and visiting guests, must hold membership receipt for the year 1938, before registering. Please attend to this, if you are not in good standing, by seeing your County Secretary at once.

Woman's Auxiliary—Registration, Severs Hotel, Mezzanine floor. Meeting place, First Presbyterian Church, 5th and Broadway.

Guests of Honor—Dr. Wm. S. Middleton, Madison, Wisconsin; Dr. Frank C. Neff, Kansas City; Dr. Edward H. Ochsner, Chicago.

Council—The Council will meet at 3:00 p.m., Monday, May 9th, in Parlor A, Mezzanine floor, Severs Hotel, for the transaction of business affairs and thereafter on call of the President.

House of Delegates—The House of Delegates will meet at 8:00 p.m., Monday, May 9th, in the Ball Room, Mezzanine floor, Severs Hotel, and at 8:00 a.m., Tuesday, May 10th, same place.

Resolutions—Any resolutions that you may desire to submit to the House of Delegates should be forwarded to the State Secretary at least one week before the Annual Meeting.

General Sessions—Will be held, beginning 10:00 a.m., Tuesday, May 10th, and 9:30 a.m., Wednesday, May 11th, in the Ritz Theater, 3rd and Court Streets.

Golf Tournament—The Oklahoma State Medical Association golf tournament will be held at Muskogee Country Club on Monday, May 9th. You may tee off for play any time after 1:00 p.m.; the course being open to any member of the State Medical Association, all day Monday. Please have your credentials with you. Green fees paid. Each player will take care of his own caddy. There will be several prizes, so please help the committee in correctly posting your scores after play Monday evening. It is necessary to furnish us with your handicap, signed by either Pro or Secretary of your club. Arrange your own foursomes if possible, otherwise these will be arranged by the committee. No twosomes allowed, unless necessary in the afternoon play, nor more than foursomes. All arrangements of and participation in trophies will be under the personal supervision of Mr. Gordon Jones, the Club's Professional.

The Annual Golf Tournament Banquet will be held immediately following play, 7:00 p.m., Monday evening. Price per plate $1.50. Please see that your reservation is in the hands of the committee, Shade D. Neely, Commercial National Bank Building, Muskogee, not later than Sunday, May 8th.

Muskogee business firms donating prizes.

Oklahoma Internists' Association — A luncheon for the members and guests of this Association will be held on the balcony of the Arrow Cafeteria, Tuesday, May 10th, at 12:30 p.m. Please notify Dr. Fred C. Dorwart, Barnes Building, Muskogee, one week before the meeting if you plan to attend.

The Chairman of the Committee on Hotels, Dr. C. E. DeGroot, anounces the following hotels will be available: Severs, Muskogee, Baltimore, Milner, Huber and Jefferson. Correspond with Dr. DeGroot, Surety Bldg., Muskogee, if you wish reservations made.

COMMITTEES IN CHARGE

H. T. BALLANTINE, General Chairman

Advisory Committee: J. H. White, J. S. Fryer, C. M. Fullenwider, W. R. Joblin, James G. Rafter, L. S. McAlister.

Finance—I. B. Oldham, W. P. Fite, W. D. Berry.

Entertainment—I. B. Oldham, R. N. Holcombe, E. H. Coachman.

Registration—H. A. Scott.

Meeting Places—Finis W. Ewing.

Hotels—C. E. DeGroot.

Golf—Shade D. Neely.

Memorial Ceremony—Floyd E. Warterfield.

Medical Reserve Corps Dinner — I. C. Wolfe.

Reception—M. K. Thompson.

Scientific Exhibits—George L. Kaiser.

WOMAN'S AUXILIARY

MONDAY, MAY 9, 1938

Registration on Mezzanine Floor, Severs Hotel

7:30 P. M.—Meeting of State Executive Board, First Presbyterian Church, Social Hall, 5th and Broadway.

TUESDAY, MAY 10, 1938

9:30 A. M.—Annual Meeting of State Auxiliary, First Presbyterian Church. Visiting Doctors' wives invited.

1:00 P. M.—Luncheon, Muskogee Town and Country Club.

4:30 P. M.—Board Meeting for new and retiring State Officers, First Presbyterian Church, Social Hall.

WEDNESDAY, MAY 11, 1938

10:00 A. M.—Motorcade. Leave from Severs Hotel.

SECTIONS

All Sections will meet at 1:30 p.m., Tuesday, May 10th, and at the same hour on Wednesday, May 11th. Meeting places will be as follows:

Surgery—Ball Room, Mezzanine Floor, Severs Hotel.

Medicine—District Court Room "A," 3rd Floor, County Court House.

Eye, Ear, Nose & Throat—District Court Room "B," 3rd Floor, County Court House.

Obstetrics & Pediatrics—County Court Room "B," 3rd Floor, County Court House.

Genito-Urinary Diseases & Syphilology—North Parlor, Mezzanine Floor, Severs Hotel.

Dermatology & Radiology—East Parlor, Mezzanine Floor, Severs Hotel.

(Court House across the street east from Severs Hotel.)

TUESDAY, MAY 10, 1938

8:30 to 10:00 A. M.—Tour of Inspection of Veterans Hospital.

(Transportation furnished from Severs Hotel.)

GENERAL SCIENTIFIC SECTION

Ritz Theater, Third and Court Streets.

10:00 to 10:40 A. M.—"The Surgery of Pulmonary Tuberculosis from a Medical Standpoint," Wm. S. Middleton, Madison, Wisconsin.

10:40 to 11:20 A. M.—"The Management of the Hypertonic Period of Early Infancy," Frank C. Neff, Kansas City.

11:20 to 12:00 Noon.—"The Middle Way," Edward H. Ochsner, Chicago.

SECTION ON GENERAL SURGERY

Ball Room, Mezzanine Floor, Severs Hotel

Chairman—Stratton E. Kernodle, Oklahoma City.

Vice-Chairman—H. G. Crawford, Bartlesville.

Secretary—P. P. Nesbitt, Tulsa, Okla.

TUESDAY, MAY 10, 1938
1:30 P. M.

"Inguinal Hernia"—W. P. Fite, Muskogee. Discussed by H. C. Weber, Bartlesville.

"Acute Appendicitis"—LeRoy Long, Sr., Oklahoma City. Discussed by M. M. DeArman, Miami.

"Surgery of the Gall Bladder"—David L. Garrett, Tulsa. Discussed by Roscoe Walker, Pawhuska.

"Treatment of Acute Intestinal Obstruction"—Geo. A. Kilpatrick, McAlester.

Discussed by LeRoy D. Long, Oklahoma City.

"Acute Pelvic Infections"—P. N. Charbonnett, Tulsa. Discussed by W. C. Vernon, Okmulgee.

"Treatment of Acute Empyema"—H. Dale Collins, Oklahoma City. Discussed by R. B. Gibson, Ponca City.

SECTION ON GENERAL MEDICINE

District Court Room "A," 3rd Floor County Court House

Chairman—Minard F. Jacobs, Oklahoma City.

Vice-Chairman—Frank Nelson, Tulsa.

Secretary—Milam F. McKinney, Oklahoma City.

TUESDAY, MAY 10, 1938
2:00 P. M.

(Tuesday's program is sponsored by the Oklahoma Internists' Association.)

"Diabetes Mellitus—Recent Advances in its Treatment"—Alexander Marble, Boston, Mass.

Chairman's Address — "Constipation" — Minard F. Jacobs, Oklahoma City.

"The Indication of Thoracoplasty as an Adjunct in the Treatment of Tuberculosis"—R. M. Shepard, Tulsa.

"Lobar Pneumonia" — Samuel Goodman, Tulsa.

SECTION ON EYE, EAR, NOSE AND THROAT

District Court Room "B," 3rd Floor County Court House

Chairman—Chester McHenry, Oklahoma City.

Vice-Chairman—A. H. Davis, Tulsa.

Secretary—E. H. Coachman, Muskogee.

TUESDAY, MAY 10, 1938
1:30 P. M.

"Bronchoscopy in Oklahoma"—L. Chester McHenry, Oklahoma City. Discussed by Ruric N. Smith, Tulsa.

"Ocular Therapeutics"—Tullos O. Coston, Oklahoma City. Discussed by D. L. Edwards, Tulsa.

"The Sinus Problem"—Wm. L. Bonham, Oklahoma City. Discussion by Hugh Evans, Tulsa.

"Iritis Occurring in Undulant Fever"—Illustrated with Slides—James R. Reed and E. Goldfain, Oklahoma City. Discussed by F. M. Cooper, Oklahoma City.

"The Use and Abuse of Cautery and Escharotics in the Nose"—O. Alton Watson, Oklahoma City. Discussed by Weldon Sanger, Ponca City.

"Cavernous Sinus Thrombosis"—Theodore G. Wails, Oklahoma City. Discussed by C. M. Fullenwider, Muskogee.

SECTION ON OBSTETRICS AND PEDIATRICS

County Court Room "B," 3rd Floor, County Court House

Chairman—M. B. Glismann, Okmulgee.

Vice-Chairman—C. W. Arrendell, Ponca City.

Secretary—Carl F. Simpson, Tulsa.

TUESDAY, MAY 10, 1938
1:30 P. M.

"Chairman's Address"—M. B. Glismann, Okmulgee.

"Birth Control"—George R. Osborn, Tulsa.

"Prenatal Care"—George L. Kaiser, Muskogee.

"Relief of Pain"—E. P. Allen, Oklahoma City.

"Placenta Accreta—Case Report"—J. M. Byrum, Shawnee.

"Still Births"—E. O. Johnson, Tulsa.

"Syphilis in Pregnancy"—F. A. Demand, Oklahoma City.

SECTION ON GENITO-URINARY DISEASES AND SYPHILOLOGY

North Parlor, Mezzanine Floor, Severs Hotel

Chairman—Charles B. Taylor, Oklahoma City.

Vice-Chairman — D. W. Branham, Oklahoma City.

Secretary—Shade D. Neely, Muskogee.

TUESDAY, MAY 10, 1938
1:30 P. M.

"Chairman's Address"—Charles B. Taylor, Oklahoma City.

"Symposium on Gonorrhea"—

"Acute Gonorrhea"—R. H. Atkin, Oklahoma City.

"Chronic Gonorrhea" — J. H. Howe, Ponca City.

"Complications of Gonorrhea"—Allen R. Russell, McAlester.

"Twenty-Five Years' Progress in Urology" —Floyd E. Warterfield, Muskogee.

"Treatment of Infections of the Prostate"—Basil Hayes, Oklahoma City.

SECTION ON DERMATOLOGY AND RADIOLOGY

East Parlor, Mezzanine Floor, Severs Hotel

Chairman—L. S. McAlister, Muskogee.

Vice-Chairman—M. M. Wickham, Norman.

Secretary—John H. Lamb, Oklahoma City.

TUESDAY, MAY 10, 1938
1:30 P. M.

"Chairman's Address" — L. S. McAlister, Muskogee.

"Treatment of Poison Ivy" — Hervey A. Foerster, Oklahoma City.

"New Aspects of Fever Therapy and Its Relationship to the Treatment of Syphilis"—Onis G. Hazel, Oklahoma City.

Election of Officers.

GENERAL MEETING

TUESDAY, MAY 10, 1938
8:00 P. M.

Ball Room, Mezzanine Floor, Severs Hotel

H. T. Ballantine, General Chairman, Presiding

Invocation—Rev. H. J. Lloyd.

Music—Quartette.

Introduction of Guests—H. T. Ballantine, Muskogee.

Address of Welcome — Finis W. Ewing, President, Muskogee County Medical Society.

Response—J. D. Osborn, Jr., Frederick.

Music—Violin Solo.

Introduction of President-Elect—Sam A. McKeel, Ada, Retiring President.

President's Address—H. K. Speed, Sayre.

9:30 P. M.

President's Reception and Dance — Ball Room, Mezzanine Floor, Severs Hotel.

WEDNESDAY, MAY 11, 1938

8:00 to 9:30 A. M.—Tour of Fort Gibson. (Transportation furnished from Severs Hotel.)

MEMORIAL SERVICE

9:30 to 10:00 A. M.—Ritz Theater, Third and Court streets.

Presiding Officer—Dr. F. E. Warterfield.

Invocation—Rev. W. G. Letham, Muskogee.

Music—Quartette.

Report of the Necrology Committee—Dr. C. E. Williams, Woodward, Chairman.

Memorial Address—Dr. LeRoy Long, Sr., Oklahoma City.

Music—Quartette.

Benediction—Rev. W. G. Letham, Muskogee.

GENERAL SCIENTIFIC SECTION

Ritz Theater, Third and Court Streets

10:00 to 10:40 A. M.—*"Observations from the Current Year's Experience with Medical Cases in a Children's Hospital"*—Frank C. Neff, Kansas City.

10:40 to 11:20 A. M. — *"Acute Coronary Occlusion"* — Wm. S. Middleton, Madison, Wisconsin.

11:20 to 12:00 Noon—*"The Socialization of Medicine"* — Edward H. Ochsner, Chicago.

SECTION ON GENERAL SURGERY

Ball Room, Mezzanine Floor, Severs Hotel

WEDNESDAY, MAY 11, 1938
1:30 P. M.

"Chairman's Address"— Stratton E. Kernodle, Oklahoma City.

Election of Officers.

"Management of Burns"—Patrick Nagle, Oklahoma City. Discussed by F. L. Flack, Tulsa.

"Diagnosis and Treatment of Trigeminal Neuralgia" — Roland M. Klemme, St.. Louis, Mo. Discussed by Harry Wilkins, Oklahoma City.

"Factors of Safety in Thyroid Surgery"— R. M. Howard, Oklahoma City. Discussed by A. S. Risser, Blackwell.

"Colles Fracture" — John E. McDonald, Tulsa.

SECTION ON GENERAL MEDICINE

District Court Room "A," 3rd Floor
County Court House

WEDNESDAY, MAY 11, 1938
1:30 P. M.

"Gastro Intestinal Allergy" — George J. Seibold, Oklahoma City.

Election of Officers.

"Masked Intermittent Malaria, A Study"—David W. Gillick, Shawnee.

"Coronary Artery Disease" — Harry C. Daniels, Oklahoma City.

"Interesting Aspects of Nephritis"—Elmer Musick, Oklahoma City.

SECTION ON EYE, EAR, NOSE AND THROAT

District Court Room "B," 3rd Floor
County Court House

WEDNESDAY, MAY 11, 1938
1:30 P. M.

"Surgical Treatment of Pyogenic Infection of the Paranasal Sinuses" — F. Clinton Gallaher, Shawnee. Discussed by H. F. Vandever, Enid.

Election of Officers.

"Syphilis of the Eye" — F. T. Gastineau, Vinita. Discussed by Gordon Ferguson, Oklahoma City.

"Lateral Sinus Thrombosis"—Donald Mishler, Tulsa. Discussed by J. C. Matheney, Okmulgee.

"Intra-Capsular Cataract Extraction"—A. J. Metscher, Enid. Discussed by Chas. H. Haralson, Tulsa.

"Functional Hearing Tests"—C. A. Pavy, Tulsa. Discussed by W. R. Mote, Ardmore.

"Necessity of Accurate Eye Examinations" —Milton K. Thompson, Muskogee. Discussed by Dr. A. H. Davis, Tulsa.

SECTION ON OBSTETRICS AND PEDIATRICS

County Court Room "B," 3rd Floor
County Court House

WEDNESDAY, MAY 11, 1938
1:30 P. M.

"Treatment of Gonorrheal Vulvo-Vaginitis"—Ben H. Nicholson, Oklahoma City.

Election of Officers.

"Nephritis"—C. E. Bradley, Tulsa.

"Pyloric Stenosis and Pyloro Spasm in Infants"—John H. Walker, Muskogee.

"Presentation of Congenital Bone Deformities"—Luvern Hays, Tulsa.

"Acute Infective Laryngotracheobronchitis" — Carroll M. Pounders, Oklahoma City.

SECTION ON GENITO-URINARY DISEASES AND SYPHILOLOGY

North Parlor, Mezzanine Floor, Severs Hotel

WEDNESDAY, MAY 11, 1938
1:30 P. M.

"Symposium on Syphilis"

"Acute Syphilis"—David Hudson, Tulsa.

"Somatic and Latent Syphilis"—James Stevenson, Tulsa.

"Cerebro-Spinal Syphilis"—C. R. Rayburn, Norman.

"Public Health Aspect of Syphilis" — Charles M. Pearce, Oklahoma City.

Election of Officers.

"Carcinoma of the Prostate" — Henry S. Browne, Tulsa.

COMMITTEE REPORTS

These reports are made in compliance with provisions of the Constitution and By-Laws which call for publication of such matter in the issue of The Journal preceding the Annual Session.

1938 Report of Committee on Post-Graduate Medical Teaching

Your Committee met February 5, 1937, and unanimously voted to submit a request to the Commonwealth Fund for financial aid in re-establishing post-graduate medical teaching in Oklahoma. This request was unanimously authorized by the House of Delegates at the annual State Meeting held in Tulsa last year (1937). Your Chairman was then requested to communicate with the Commonwealth Fund, and a personal interview was arranged with the Director and Aassociate Director of the Fund, which was held in New York June 9, 1937. We were advised that the Commonwealth Fund would consider our application but desired the active cooperation of all agencies in the state interested in post-graduate medical instruction. At a later meeting of the Committee, Dr. Chas. M. Pearce, State Commissioner of Health, offered the cooperation and financial assistance of the Oklahoma State Department of Health. Dr. Robert U. Patterson, Dean of the Medical School of the University of Oklahoma, advised that the school would be unable to participate financially but was in sympathy with the program and would aid in an advisory capacity. The Committee suggested that the President of the State Association apoint an advisory committee, and Dr. McKeel named the following: Dr. Chas. M. Pearce, Dr. Robert U. Patterson, Dr. Otis G. Bacon, Dr. J. B. Eskridge, Dr. M.

J. Searle, and Dr. C. W. Tedrowe. It was decided to present a two-year course in obstetrics.

A budget was prepared and submitted to the Commonwealth Fund, which called for a total yearly expenditure of $19,500.00, distribution to be as follows:

Clinical Instructor, salary and traveling expense	$10,000.00
Field Director, salary and traveling expense	6,000.00
Office Secretary	1,500.00
Miscellaneous account, for stationery, postage and other office supplies, motion pictures, lantern slides, projectors, manikin, etc., for teaching purposes, etc., for first year only	2,000.00

The Council of the State Medical Association voted to provide $2,000; State Health Department $5,000; and the Commonwealth Fund was asked to supply the balance, in the amount of $11,500. An additional $1,000 is anticipated from registration fees.

We were advised by Miss Quin, the Associate Director, October 29, 1937, that our application had been approved at the October meeting of the Board. Your Chairman was then requested to communicate with prospective instructors. Knowing that Tennessee State Medical Association had recently begun a similar program and had interviewed a number of prospective instructors, we communicated with Dr. James R. Reinberger, Chairman of the Tennessee Committee. Your Chairman met with Dr. Reinberger in New Orleans in December, and discussed a number of applicants with him. After much correspondence and after carefully going over the credentials of a number of applicants, it was decided to invite Dr. Edward N. Smith, of Spokane and New York, to come to Oklahoma City for a personal interview with the Committee.

Much valuable time was lost in selecting a Field Director in waiting for a decision of the Tennessee Committee on whether or not they would permit Mr. L. W. Kibler to act in a dual capacity as organizer for both states, and a final negative decision was not reached until January 18. Immediately, we wired Dr. Smith to report to our Committee, which he did on February 4. After interviewing Dr. Smith, the Committee unanimously chose him as our Instructor. Because of his experience and knowledge of post-graduate teaching in this state, Mr. Kibler was asked to meet with us and aid us in outlining our first program and in selecting a field organizer. It was finally voted that your Committee go forward with the work of securing temporary field assistance in the organization of our first course and in training some one for the permanent position. Miss Mary Frances Carpenter was selected as office secretary. The treasurer of the State Medical Association was named to disburse the funds upon approval of vouchers by the Committee Chairman.

The state has been temporarily divided into 12 teaching circuits. Five cities in each circuit are to be selected as the teaching centers. It was decided to begin the first course April 4, 1938, in northeastern Oklahoma, including the counties of Cherokee, Craig, Delaware, Mayes, Osage, Ottawa, Rogers, and Washington, at the centers of Claremore, Pawhuska, Bartlesville, Vinita, and Miami.

The response of the physicians in this circuit has been most gratifying. Registrations totaling 85 per cent have already been received, as this is written two weeks before the scheduled opening of the course. Other circuits now are being organized, and a minimum of 15 registrations in each center is required. The registration fee of $5.00 is added to the general Post-Graduate Fund.

Dr. Edward N. Smith has been selected by your Committee as the medical instructor in the obstetrical program. Dr. Smith is highly qualified to handle this work. He is a graduate of Washington State College, and of the University of Pennsylvania School of Medicine. He has had an excellent background of experience including rotating internship, Camden, New Jersey, several residencies in obstetrics and gynecology including Cornell Medical Center, New York City; Margaret Hague Maternity Hospital, Jersey City, New Jersey; Columbia Medical Center, Sloane Hospital; New York Post-Graduate Hospital, and is a diplomate of the American Board of Obstetrics and Gynecology. He is the recipient of the Degree of Med. D. Sc. in Obstetrics and Gynecology, Columbia University.

In addition to Dr. Smith's very thorough postgraduate training in obstetrics, he did general practice in Livingston County, New York, for four years following his graduation, serving also as County Health Officer and secretary of the local medical society.

In view of his broad experience as a general practitioner and teacher, he is cognizant of their problems and particularly adapted for his present position. Dr. Smith is very pleasing of personality, and has the ability of conveying his world of information in a manner easily understood.

Between lectures, as far as his time for travel will permit, Dr. Smith will be available for free consultation with doctors registered in the course. You can readily see from this that physicians will have the advantage of discussing the theories advanced in the lectures over their cases in actual practice.

There will be ten lectures given in each circuit consisting of five teaching centers. The instructor will give one lecture each week in each center. The sessions include approximately one hour of didactic lecture followed by demonstrations on clinical patients, manikin, female pelvic skeleton, etc. The lecture, itself, will be supplemented by the answer and discussion of questions submitted the previous week, and in addition, any clinical material available will be utilized for study. The accessory equipment will consist of actual demonstrations of the instruments, chemicals, and procedures advocated, supplemented by charts, graphs, lantern slides and 16-millimeter moving picture projection.

The supply of patients for these clinical lectures will be assured through the cooperation of the local committee chairman. Any physician enrolled in the course may submit a patient for examination or group discussion when time permits by notifying the local committee chairman.

Your Committee expresses its appreciation to Dr. James R. Reinberger, Chairman, and Mr. L. W. Kibler of the Tennessee Committee on Post-Graduate Medical Instruction for their cooperation and suggestions.

A supplemental verbal report will be given to the House of Delegates at the annual meeting of our State Association.

Respectfully submitted,

Committee on Post-Graduate Medical Teaching,

Henry H. Turner, Chairman,
H. C. Weber,
T. H. McCarley.

Report of Committee on Control of Cancer of Oklahoma State Medical Association

Your Committee has actively joined with the State Federated Women's Clubs in organizing the Women's Field Army in Oklahoma with the majority control resting in this committee as laid down in our special report appearing in the March issue of the Journal, page 94.

We have communicated with every county medical society in the state and they now have full information and instructions as to the fundamental principles and the actual operation of this public educational effort.

To the date of this writing 18 county medical

societies have appointed active cancer committees. Most of these have formed county speakers' bureaus and are supplying speakers for small and large public meetings arranged by the women's organization. The reports coming to us give ample evidence that both the profession and the members of the federated clubs are taking this work seriously and are pleased with the results.

Appointments of additional county cancer committees are being received daily and they are satisfactorily coordinating their educational activities with the women's organization.

Several large meetings have been held in the state where the county cancer committees have requested speakers from outside their county and these have been supplied through this committee from the State Speakers' Bureau which is under the direction of this committee.

Every county which has not completed its organization is urged to do so at once and in the event of misunderstanding or desiring more information they should write a member of this committee.

The American Society for the Control of Cancer is liberally furnishing materials for all educational efforts. This assistance in supplying uniform sound factual information for both speakers and public is of tremendous value and should be appreciated by the members of the State Medical Association.

RECOMMENDATIONS

1. Continued active cooperation with the American Society for the Control of Cancer.

2. Encouragement of frequent programs and discussions about cancer in all county medical societies.

3. Avoidance of abrupt changes in personnel of this committee in order to maintain a continuity of purpose and activity.

4. Assignment of funds for secretarial assistance and other necessary expense to this committee for the success of this work.

5. Rigid adherence to the ethical principles outlined and followed by this committee in recent years.

Wendell Long, Chairman.
E. S. Lain.
Paul Champlin.
Ralph McGill.

Report of the Committee on Public Policy and Legislation

The Committee soon after appointment was faced by a protest on Initiative Petition No. 166, which was filed with the Secretary of State.

During this time the Committee has held four meetings in Oklahoma City, one in Tulsa, one in Enid and one in Shawnee. In addition to this each member of the Committee has visited various groups and County Medical meetings in the various parts of the state.

The Committee has also sent out three different letters to each member of the State Medical Association and a number of letters to the officers of the County Societies.

All this effort was made to raise money to cover expense of protesting the Initiative Petition above mentioned.

In protesting the Initiative Petition 166 a lawyer, handwriting experts and clerical help were employed to handle the hearing before the Secretary of State. These expenses, with all other expenses such as printing, postage, stenographic hire, have been paid.

The printing above referred to includes 5,000 copies of the Initiative Bill, one of which was mailed to each Doctor in the state, and a sufficient supply retained to supply the attendance at the meeting of the State Association in Muskogee and for any other Doctor desiring additional copies of the same.

This, itself, has not been without considerable expense.

The protest on the bill at this time is before the Supreme Court. Whether we will have sufficient funds to carry on through the Court remains yet to be seen.

The Committee desires to make a detailed report on all its activities before the House of Delegates in the meeting of the State Association and a copy of the Auditor's report on the funds collected and expended will be presented at that time in detail.

Respectfully submitted.

S. A. McKeel, President,
H. K. Speed, President Elect,
W. P. Neilson,
R. C. Pigford,
J. M. Byrum.
By: J.M.B., March 15, 1938.

Report of the Committee on Industrial Service and Traumatic Surgery

The function of the Industrial Service and Traumatic Surgery Committee should be a very important one, but the present committee, as well as committees of other years, has faced a situation in which there has seemed to be very little general interest on the part of the members of the State Medical Association.

Thus far this year, no definite problems have arisen which would require the investigation or consideration of this Committee. A few years ago a state law was enacted, setting up a State Insurance Fund, which to a very great extent has taken over the greater portion of the compensation insurance business. Most of the private casualty insurance companies have ceased writing this kind of business, except companies where the compensation policy must be written in order to secure and render satisfactory service to the employer on his many other insurance necessities. As a result of this alteration in the status of compensation insurance, a greater proportion of all injury cases of a compensable nature, occurring throughout the state are handled through the State Insurance Fund, who has its own claim adjusters and attorneys. These adjusters and attorneys must settle for disability through the action and judgment of the State Industrial Commission, under exactly the same rules as a private insurance company. However, the State Insurance Fund, as well as the State Industrial Commission is at the State Capitol building, so that many details and daily difficulties may be ironed out between members of the two organizations, without formal procedure. In many instances this is of advantage to the doctor who is treating an injured employee, especially if the doctor takes the trouble to make his reports clear and understandable so that the adjusters of the State Fund can properly consider the problems. The adjusters of the State Fund have made an especial effort to cooperate with the profession throughout the state in the care of injured employees who come under their jurisdiction. They make no special appointments to doctors for the care of their cases, and try not to discriminate or interfere with the professional rules or methods, in any way. However, the adjusters of the State Insurance Fund have become experienced to the extent that they quickly recognize inefficient medical service, and in many instances give notification that certain cases must be sent to recognized specialists for treatment. The expression from these adjusters is that the medical profession is cooperating in an extremely satisfactory manner. As far as this Committee is able to determine, the profession of the State seems very well satisfied with the present status of compensation industrial practice, as compared with some of the difficulties which arose a few years ago when many of the insurance companies continuously complained about exorbitant hospital and professional fees and instructed their

claim adjusters to secure reduction of fees in all cases possible. The Fund has not established any definite fee schedule but has an average fee schedule in their office, which as a whole has seemed fair to all concerned. Many items on a fee schedule cannot be adhered to strictly, and when an unusual situation arises the doctor should correspond with the adjusters of the State Fund before going too far with the case, in order to give them a chance to record complications and difficulties in the case, and make an investigation if necessary.

Your Committee welcomes any discussion or criticisms or difficulties which may arise, and will be willing to present formally any reasonable resolutions or requests for investigation to the State Insurance Fund or the State Industrial Commission for consideration.

Earl D. McBride, Chairman.
J. F. Park.
G. H. Stagner.

Report of Crippled Childrens Committee

The Crippled Childrens Committee of the Oklahoma State Medical Association has had a fairly active year, particularly in cooperation, and consultation in regard to the recent epidemic of infantile paralysis. In cooperation with the Oklahoma State Health Department, a pamphlet was prepared and published by the Oklahoma Commission for Crippled Children, recapitulating our present knowledge on infantile paralysis. This pamphlet was distributed by the Commission and we are informed that it had a very good reception among the doctors of the state.

We have consulted on various occasions with the Oklahoma Commission for Crippled Children and will attempt to cooperate with them in augmenting their program.

Yours very truly,

D. H. O'Donoghue, Chairman.
George S. Baxter.
Ray Lindsey.

Report of the Committee on Medical Education and Hospitals

During the past year, this Committee has been ready to cooperate with all medical agencies in the state looking to the advancement of educational standards, and to increase the opportunities for post-graduate education within the reach of physicians practicing in the state. The Committee took an active part in the work of the Oklahoma Clinical Society during its conference held in Oklahoma City during November, 1937. While this presented interesting and valuable lectures and conferences available to physicians residing in other states, its greatest benefit was for physicians practicing in our own state.

While the University of Oklahoma School of Medicine (the only one in the state) more than two years ago presented comprehensive plans calculated to increase the teaching facilities of the medical school, and also to amplify the teaching facilities and the capacity of the University and Crippled Children's Hospitals, the Legislature made no appropriations for the indicated new additions and construction. The Legislature did, however, appropriate more funds for the medical school for salaries and maintenance, and for the two teaching hospitals than ever before in the history of the school. There are now a sufficient number of full-time teachers in the first two years (preclinical years) of the medical school to carry on the teaching on a very high plane for the number of students for which the school now has accommodations. It is hoped that the next Legislature (meeting in January, 1939) will grant additional funds in order to build up a nucleus of full-time teachers in the important clinical departments of the last two, or clinical years of the medical school. A few full-time and part-time teachers in the clinical departments to work with the larger fine staff of clinical teachers who are also engaged in private practice, will go far to place our medical school in the forefront of like institutions in the United States. It is hoped that the next Legislature will also furnish some of the funds which are needed to begin the construction program which will expand the facilities of the two teaching hospitals, so that in addition to providing more clinical material for teaching medical students, the state will also be able to care for a greater number of its underprivileged citizens who look to it for help when they need it.

One of the most unfortunate situations which the authorities of the two teaching hospitals have to face from time to time is their inability to take in patients who need hospital treatment, because the present limited bed capacity of these two institutions makes it impossible.

The Committee is deeply interested in plans which will supply the needs of the other fine state hospitals which care for those afflicted with mental diseases and tuberculosis.

Members of this Committee of the medical school are co-operating in the conduct of postgraduate courses of instruction in Obstetrics which are to be given throughout the state of Oklahoma for one year. This work is being given under the auspices of the Oklahoma State Medical Association from funds provided by the State Health Department and the Commonwealth Fund of New York.

Robert U. Patterson, Chairman.

ANNUAL REPORT
of the Secretary-Treasurer-Editor
March 31, 1937, to March 31, 1938

TO THE MEMBERSHIP OF THE OKLAHOMA STATE MEDICAL ASSOCIATION:

The Constitution and By-Laws provide that the Secretary-Treasurer-Editor shall submit to the Council and through it to the House of Delegates a report of the various activities of his office during the previous year

Detailed statements of all financial transactions, duplicate deposit certificates and other business matters I hereby submit for audit to the Council.

MEMBERSHIP: On March 31, 1937, we had 1,350 members; on March 31, 1938, we find our membership to be 1,313. We, of course, expected some decrease in membership when the dues were increased to $8.00 per year. However, we are greatly surprised to find the decrease to be as small as is apparent. It is unfortunate that our membership is not sufficient so that we can retain three Delegates to the American Medical Association, but as the quota has been increased for each state we will only be represented by two Delegates for the next three years.

DEATHS OF PHYSICIANS: We, of course, regret to have to mention the names of our members who have died during the past year. A list of these members will be found with the report of the Necrology Committee and they will be properly honored at the Memorial Service which will be held during the Muskogee Meeting.

MEDICAL DEFENSE: The following cases have either been settled, dropped or disposed of in the following manner:

Settled: Cleveland County, No. 13226.
Pottawatomie County, No. 6064.
Roger Mills County, No. 5875.

Pending: Caddo County, No. 9407.
Carter County, No. 16262.
Choctaw County, No. 8644.
Logan County, No. 1693.
Mayes County, No. ———
Pontotoc County, No. ———

In addition to the above the following cases are now pending, the progress and status of which is unknown as they are pending or dormant in the courts:

Blaine County, No. ———
Carter County, No. ———
Craig County, No. ———
Hughes County, No. ———
Payne County, No. ———
Pottawatomie County, No. ———

I want to mention in particular our very intimate relationship with the Cooperative Medical Advertising Bureau, whose offices are in the American Medical Association building. We have received from the Bureau every consideration and we have been very careful to accept no advertising which has not been approved by this Bureau. Our advertising material is kept clean and strictly ethical even though we are offered, every month, advertising that is not of the type which we would care to use. You may be sure that any products that you see advertised in your Journal have received the approval of the Council on Pharmacy and Chemistry of the American Medical Association. It would be a great advantage to the Journal if every doctor would ask the "detail men" who visit them whether or not his product is Council Approved, as there have been several accidents during the past year from the use of products submitted by detail men that were not Council Approved and by their use many deaths resulted. It would be to the advantage of the members of the State Association to patronize the pharmaceutical houses that carry Council Approved products, that use the Journal for advertising, and exhibit at our annual meetings.

The Journal, during the past year, has maintained its usual size and there have been some issues that have been quite voluminous. We have been glad to accept the high type papers that have been presented by the members and there has been sufficient material so that our scientific section has been well filled with worth while material.

Again we want to thank the physicians who give so graciously of their time in the preparation of our abstract department. There is much favorable comment from the subscribers as to the scope, detail and excellent manner in which these abstracts appear in the Journal. The men who prepare these abstracts are the busiest physicians and surgeons in the state and the time consumed means much to them, and their contributions add greatly to the value of our Journal.

As usual we are not in position to list our Bills Receivable, however, a schedule of same is hereby submitted to the Council.

From the reports which you will find published in the Journal you will note that there have been decided activities by the various Committees, and of special importance is the work by the Post Graduate Medical Teaching Committee, who have been able to bring to the state post graduate work on Obstetrics, with a full time instructor, who is assisted by a director and stenographer. This work has been made possible by financial assistance from the Commonwealth Fund and Federal money obtained through the State Health Department.

The Legislative Committee has a job on their hands which no doubt will receive the attention of both the Council and House of Delegates.

The Committee on Study and Control of Cancer has been very active and is organizing throughout the state a campaign which, if carried on over a period of years, will without question reduce cancer mortality. This Committee deserves the cooperation of every county medical society.

At the beginning of 1938 we had an indebtedness with the First National Bank of McAlester of $9,000.00. Since payment of 1938 dues, $2,000.00 of this indebtedness has been paid, showing our indebtedness to the Bank, at this time, to be $7,000.00. The expense has been carefully budgeted for the next few years, and it would appear that about $2,000.00 each year, together with the $2,000.00 which has been allocated by the Council for Post Graduate Medical Teaching in Obstetrics is all that can be paid, and satisfactory arrangements have been made so that our indebtedness can be liquidated in this manner.

AUDIT REPORT

Oklahoma State Medical Association
Dr. L. S. Willour, Secretary-Treasurer
McAlester, Oklahoma

For Period From April 1, 1937, to March 31, 1938
By J. K. Pemberton, McAlester, Oklahoma

April 4th, 1938.

Dr. Sam A. McKeel, President,
Oklahoma State Medical Association,
Ada, Oklahoma.

Dear Dr. McKeel:

Upon request, I have audited the books of account, records and investments of

Dr. L. S. Willour, Secretary- Treasurer
Oklahoma State Medical Association,
McAlester, Oklahoma,

for the period beginning April 1st, 1937, and ending March 31st, 1938, and submit the following schedules, together with comments and supporting exhibits.

Cash receipts were traced into the bank through a detailed check of the items received, against deposit tickets as shown by the files of the bank. Cash expenditures and disbursements were checked against bank records, all vouchers and checks were examined and compared with original entries; endorsements scrutinized and found to be in order.

In company with Dr. L. S. Willour, Secretary-Treasurer, I have examined the following investments which are kept in a safety deposit box in the First National Bank, McAlester, Oklahoma, which box is registered in the name of the Oklahoma Medical Association; except at this date the bonds are held by the bank as collateral to a loan totaling $5,000.00 executed by the Oklahoma Medical Association:

GENERAL FUND:

3¼% U. S. Treasury Bonds of 1944-46—

Bond No.	Par Value	
94180L	$ 500.00	
94181A	500.00	
95099K	1,000.00	$2,000.00

MEDICAL DEFENSE FUND:

3¼% U. S. Treasury Bonds of 1943-45—

Bond No.	Par Value	
878J	$1,000.00	
879K	1,000.00	
880L	1,000.00	$3,000.00

April 15, 1937, and October 15, 1937, coupons were attached to the bonds and had not been clipped and deposited, however on April 4th, 1938, these coupons were clipped and deposited to their respective ac-

counts. April 15th, 1938, and subsequent coupons are attached to the bonds.

The books of the Association are kept on an actual cash receipts and disbursements basis, and for that reason accrued items are not included in the audit, however upon investigation I find no unpaid or accrued accounts payable, all bills having been paid prior to the date of the audit; there are certain accounts receivable owing to the Association and a list or schedule in detail has been prepared showing these accounts and the amounts due, and is attached hereto and made a part of this audit report.

I find upon examination the following Notes and Accounts payable made and owing by the Association:

ACCOUNTS PAYABLE:

To the General Fund O. S. M. A.	$3,824.00

NOTES PAYABLE:

To the General Fund O. S. M. A.	3,800.00
To the First National Bank, McAlester, Okla. (Secured by the above described U. S. Treasury Bonds of the par value of $5,000.00)	5,000.00
To the First National Bank, McAlester, Oklahoma (Unsecured)	2,000.00

I further find that proper resolutions were passed authorizing the execution of said borrowings which are therefore in order, and constitute valid and binding obligations of the Oklahoma State Medical Association.

I respectfully submit the following Audit and Report for your information.

J. K. PEMBERTON, Auditor.

* * *

The above and foregoing statement and following Audit is submitted as my report for the period from April 1st, 1937, to March 31st, 1938.

L. S. WILLOUR, Secretary-Treasurer,
Oklahoma State Medical Association.

THE FIRST NATIONAL BANK
McAlester, Oklahoma
April 2nd, 1938

Dr. L. S. Willour, Secretary-Treasurer,
Oklahoma State Medical Association,
McAlester, Oklahoma.

Dear Dr. Willour:

This is to certify that according to our records the following accounts reflected a credit balance, subject to check, at the close of business March 31st, 1938, as follows:

Oklahoma State Medical Association:	
General Fund	$6,014.37
Medical Defense Fund	1,185.00
Post Graduate Fund	4,125.84
Legislative Fund	1,195.27

It is further certified that the following direct obligations of the Oklahoma State Medical Association were owing to the First National Bank, McAlester, Oklahoma, at the close of business on March 31st, 1938, as follows:

Date of Note	Description of Collateral	Date Due	Amount
Feb. 23, 1937	Unsecured	May 23, 1938	$2,000.00
Feb. 12, 1937	3¼% U. S. Treasury Bond of 1944-46 No. 95099K	April 10, 1938	1,000.00
Feb. 18, 1937	3¼% U. S. Treasury Bonds of 1944-46 Nos. 94180L, 94-181A, 2 at $500.00; and 3¼% U. S. Treasury Bonds of 1943-45 Nos. 878J, 879K, 880L, being 3 at $1,000.00	April 10, 1938	4,000.00
	TOTAL Indebtedness		$7,000.00

Yours very truly,

J. K. PEMBERTON,
Vice-President and Cashier.

Oklahoma State Medical Association
Dr. L. S. Willour, Secretary-Treasurer
McAlester, Oklahoma
March 31, 1938

BALANCE SHEET

ASSETS

CURRENT ASSETS:		
First National Bank, McAlester, Oklahoma:		
General Fund	$5,764.22	
Medical Defense Fund	1,198.00	
Post Graduate Fund	2,630.08	
Legislative Fund	1,144.07	$10,736.37
INVESTMENTS—U. S. GOVERNMENT BONDS:		
General Fund (Par Value)	2,000.00	
Defense Fund (Par Value)	3,000.00	5,000.00
NOTES AND ACCOUNTS RECEIVABLE:		
Due to General Fund	7,624.00	7,624.00
TOTAL		$23,360.37

LIABILITIES

EXCESS OF ASSETS OVER LIABILITIES:		
Balance March 31, 1937	$4,518.87	
Add:		
Excess of Income over Expenditures:		
General Fund	466.52	
Medical Defense Fund	1,151.00	
Post Graduate Fund	2,630.08	
Legislative Fund	902.94	8,736.37
NOTES AND ACCOUNTS PAYABLE:		
To General Fund	7,624.00	
To Bank (Secured U. S. Gov't. Bonds)	5,000.00	
To Bank—Unsecured	2,000.00	14,624.00
TOTAL		$23,360.37

CASH RECEIPTS AND DISBURSEMENTS
Oklahoma State Medical Association
Dr. L. S. Willour, Secretary-Treasurer
McAlester, Oklahoma
April 1, 1937, to March 31, 1938

GENERAL FUND:		
Balance		$ 4,282.99
RECEIPTS:		
Advertising	$7,556.54	
Memberships	9,135.10	
Transfer from Medical Defense Fund	1,447.75	
Repayment from Legislative Fund	500.00	
Proceeds Loan from First National Bank	2,000.00	
Total Receipts		20,639.29
Total Cash to Account for		$24,922.38
DISBURSEMENTS:		
Dr. L. S. Willour: Salary to 4-1-38 at $200.00 per month	$2,400.00	
Oltha Shelton: Salary to 4-1-38 at $125.00 per month	1,500.00	
Oltha Shelton; Salary advance	14.36	
Other Office Salaries	30.00	
Social Security Tax	35.75	
Rent	313.80	
Telephone and Telegraph	73.55	
Postage	266.22	
Stationary and Printing	170.78	
Treasurer's Bond and Audit	75.00	
Printing Journal	6,065.54	
Press Clipping Service	36.00	
Expense Annual Meeting	606.24	
Expense Council and Delegates	804.04	
Expense Post Graduate Work	341.85	
Expense Medical Defense	100.00	
Expense—Legislature	201.03	
Purchase Typewriter	84.00	
Interest Paid Borrowed Money	165.00	
Sundry Expense	51.00	
Payment of Loan First National Bank	2,000.00	
Loan to Public Policy and Public Relations Committee	3,824.00	
Total Disbursements		19,158.16
Balance on Hand March 31, 1938		$ 5,764.22
MEDICAL DEFENSE FUND:		
Balance March 31, 1937		$ 1,494.75
RECEIPTS:		
Fees Collected	$1,301.00	1,301.00
Total Cash to Account for		$ 2,795.75
DISBURSEMENTS:		
Transfer to General Fund	$1,447.75	
Medical Defense of Members	150.00	
Total Disbursements		1,597.75
Balance on Hand March 31, 1938		$ 1,198.00
POST GRADUATE FUND:		
Balance March 31, 1937		0
RECEIPTS:		
Received from Commonwealth Fund March 3, 1938		$ 4,175.00
Dues Collected	240.00	240.00
Total Cash to Account for		$ 4,415.00
DISBURSEMENTS:		
Salaries, Executive	$1,333.32	
Salaries, Clerical	187.50	
Stationary and Printing	50.19	
Postage	17.68	
Sundry	47.61	
Office Furniture and Fixtures	148.62	
Total Disbursements		1,784.92
Balance on Hand March 31, 1938		$ 2,630.08

CASH ON DEPOSIT

Oklahoma State Medical Association
Dr. L. S. Willour, Secretary-Treasurer
McAlester, Oklahoma
March 31, 1938

FIRST NATIONAL BANK, McALESTER, OKLAHOMA.

GENERAL FUND:			
Balance as per Records			$ 5,764.22
ADD:			
Outstanding Checks:	No.	Amt.	
	3617	4.00	
	3574	1.00	
	4115	4.00	
	4663	6.50	
	4677	6.50	
	4683	6.24	
	4688	486.50	
	4689	1.61	
	4690	26.15	542.50
			6,306.72
DEDUCT:			
Deposits, Shown on Records 3-39-38		194.35	
Shown Banks Records 4-4-38		98.00	292.35
Balance as per Bank Statement and Verification Letter			$ 6,014.37
MEDICAL DEFENSE FUND:			
Balance as per Records			$ 1,198.00
DEDUCT:			
Deposit, Shown on Records 3-29-38; Shown Bank Records 4-4-38		13.00	13.00
Balance as per Bank Statement and Verification Letter			$ 1,185.00
POST GRADUATE FUND:			
Balance as per Records			$ 2,630.08
ADD:			
Outstanding Checks:	No.	Amt.	
	2	350.00	
	4	47.61	
	5	21.52	
	6	18.92	
	7	95.43	
	8	53.19	
	9	132.69	
	10	9.75	
	11	416.66	
	12	350.00	1,495.76
Balance as per Bank Statement and Verification Letter			$ 4,125.84

INCOME AND EXPENDITURES

Oklahoma State Medical Association
Dr. L. S. Willour, Secretary-Treasurer
McAlester, Oklahoma

For Period from April 1, 1937, to March 31, 1938

GENERAL FUND:		
INCOME:		
Advertising	$7,556.54	
Memberships	9,135.10	
Total Income		$16,691.64
EXPENDITURES:		
Salaries: Secretary-Treasurer	2,400.00	
Salaries: Assistant Secretary	1,500.00	
Salary Advance: Assistant Secretary	14.36	
Other Office Salaries	30.00	
Social Security Tax	35.75	
Rent	313.80	
Telephone and Telegraph	73.55	
Postage	266.22	
Stationary and Printing	170.78	

Treasurer's Bond and Audit	75.00	
Printing Journal	6,065.54	
Press Clipping Service	36.00	
Expense, Annual Meeting	606.24	
Expense, Council and Delegates	804.04	
Expense, Post Graduate Work	341.85	
Expense, Medical Defense	100.00	
Expense, Legislature	201.03	
Purchase Typewriter	84.00	
Interest Paid Money Borrowed	165.00	
Sundry Expense	51.00	
Total Expenditures		$13,334.16
Excess of Income Over Expenditures		$ 3,357.48
DEDUCT: Loan to Public Policy and Public Relations Committee		3,824.00
Balance Net—Excess of Income over Expenditures		$ 466.52

MEDICAL DEFENSE FUND:

INCOME:

Fees Collected	$1,301.00	$ 1,301.00
Total Income		$ 1,301.00

EXPENDITURES:

Medical Defense of Members	$ 150.00	
Total Expenditures		$ 150.00
Excess of Income over Expenditures		$ 1,151.00

POST GRADUATE FUND:

INCOME:

Received from Commonwealth Fund	$4,175.00	
Fees Collected	240.00	
Total Income		$ 4,415.00

EXPENDITURES:

Salaries, Executive	$1,333.32	
Salaries, Clerical	187.50	
Stationery and Printing	50.19	
Postage	17.68	
Sundry Expenses	47.61	
Office Furniture and Fixtures	148.62	
Total Expenditures		1,784.92
Excess of Income over Expenditures		$ 2,630.08

Books Received and Reviewed

HERNIA, Anatomy, Etiology, Symptoms, Diagnosis, Differential Diagnosis, Prognosis and the Operative and Injection Treatment, by Leigh F. Watson, M.D. Member of Attending Staff of California Lutheran Hospital and Methodist Hospital of Southern California, Los Angeles. Second Edition. The C. V. Mosby Company, St. Louis, 1938.

This work, by a surgeon who for some years was an honored member of the Oklahoma profession, is the most complete treatise on the subject of hernia to be presented. The book is beautifully illustrated and well edited.

The various operative procedures for every sort of hernia are considered in detail, diagnosis, preoperative and post-operative care are considered. The anatomy of all types of hernia is thoroughly described and illustrated.

Several chapters give in the most minute detail the treatment of hernia by injection. Indications and contra indications for this sort of treatment, formulae of injection materials, dosage, truss fitting and all other phases of the procedures receive the most careful attention of the author.

Medico-legal and compensation features with many pertinent suggestions are presented.

In all this is a most interesting presentation of the subject of hernia and when carefully read will add much to the surgeon's knowledge of this subject.

SHADOW ON THE LAND — SYPHILIS, by Thomas Parran, M.D., Surgeon General of the United States Public Health Service, Washington, D. C.

This is well presented in a story like form of syphilis and its dangers to the people of this nation.

It presents all the dangers of its contagiousness and complications as well as end results in form of delinquents, deformities and various other effects on economic status of the people as a whole. It is equally well written for medical men and for laity and is a challenge to both.

A TEXTBOOK OF SURGICAL NURSING, by Henry H. Brookes, Jr., M.D., Instructor in Clinical Surgery, Washington University School of Medicine; Surgeon to the Out-Patients, Washington University Dispensary; Assistant Surgeon to Barnes Hospital. Illustrated. The C. V. Mosby Company, 1937.

This very complete textbook covers not only the nursing problems but many of the surgeon's problems. The preoperative care, essential preoperative laboratory examination; preparation of the patient in all respects, including the operative field, are thoroughly covered, as well as the post operative care, including diagnosis of nursing treatment fully described.

Not only does this serve as a most complete text for nurses but might well be read by physicians and surgeons interested in surgical subjects. I would say that any nurse, who would conscientiously read and digest this treatise, would very satisfactorily specialize in the nursing of surgical patients. It is a most complete text and I heartily recommend it.

MENTAL THERAPY, Studies in Fifty Cases, by Louis S. London, M.D., formerly passed Assistant Surgeon (R) United States Public Health Service; Medical Officer United States Veterans Bureau; Assistant Physician Central Islip State Hospital, Central Islip, New York, and Manhattan State Hospital, Wards Island, New York. Two volumes, price $12.50. Covici-Friede Publishers, New York.

This is no doubt one of the best works on abnormal psychology published in a long time. Dr. London has been interested in Freudian theories since 1913. Through his long and distinguished career in state hospitals for the insane and his boundless opportunity for taking the working measure of the genius of Freud, he has been one of those instrumental in bringing about the acceptance of psychoanalysis as a vital method of research into the enigma of the psychosis. Hence, this book is a work of unquestionable authority.

This book is a presentation of 50 cases and is divided into six parts. Part one is entitled "Metapsychology" and describes the historical evolution of psychotheropeutics. Part two takes us into the case histories. Here we see the minor psychoses clearly dramatized and detailed. Part three takes us into the graver paraphilias (sexual perversions). Part four concerns cases that are borderline between nemoses and major psychoses. Part five deals with schizophrenia and with paranoia. The last part deals with the manic depressive psychoses.

There is an extremely valuable glossary at the end of the second volume.

This book should become an extremely valuable reference volume for psychologists, neurologists, psychiatrists and general practitioners.

ABSTRACTS : REVIEWS : COMMENTS *and* CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from LeRoy Long Clinic
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The Injection Treatment of Hernia; Kansas City Medical Journal, January, 1938; A. S. Jackson.

In 1933 Bratrud and McKinney of the University of Minnesota brought forth their views in regard to the injection treatment of hernia. The idea of injecting a hernia by a solution was not new since various investigators during the past century have written and talked of the subject. Few if any of these, however, served to awaken the interest of the medical profession by reliable scientific investigation based upon animal experimentation and pathological studies. That the latter was conducted under the guidance of Drs. Wangensteen and Bell of the Surgical and Pathological Departments of the University of Minnesota is sufficient to attract attention to the subject.

In attempting to ascertain the facts for himself, the author began a study of the problem in 1934 and with his associate, Dr. Holmgren, injected approximately 280 hernias in 230 patients. He is not yet prepared to give any opinion as to the efficacy of the method in his hands, feeling tnat three years is not sufficient time to form definite conclusions regarding any method of treating hernias.

There are reports in the literature regarding the injection treatment of hernia based on short periods of observation with high percentages of cures. Their value is questionable. What is wanted are the facts. Can a hernia be cured by the injection of a solution? As a surgeon the author tried to look upon this subject with an open mind to determine whether or not this method was successful.

He says that after a study of nearly 300 cases he is not as enthusiastic as many who claim over 90 per cent cures, nor can he accept a report claiming less than three per cent cures.

It seems that there is no generally accepted successful method of curing hernia. It is apparent that surgery has not alone entirely settled the hernia problem. Even the promising Gallie fascial suture operation appears to be ineffective according to a report from the Hospital for Ruptured and Crippled at New York City, which shows 284 or 29 per cent recurrences in 975 operations. It is significant that 63 per cent of the recurrent cases developed after one year so that the longer the study is continued the higher is the percentage of recurrence. This excellent fact finding study covered a period of 11 years. As a consequence of these disappointing results, the fascial suture method of Gallie has been largely abandoned at the New York Hospital for Ruptured and Crippled and silk is now used routinely. Many other surgeons have returned to the use of silk and the technique advocated by Halstead.

The author now believes that the incidence of recurrence of hernia following herniotomy in this country is about 15 per cent. His former idea was that this figure would be about 10 per cent.

In this article he merely summarizes the findings of his own study and does not attempt to review the historical aspect of the injection method for the treatment of hernia nor does he attempt to give the technique for the method.

He concludes that the injection treatment of hernia has already shown sufficient results in the hands of capable scientific investigators to warrant a careful study by all who are interested in the problem of hernia. Until more time has elapsed and the end results of large series of cases have been carefully tabulated, final judgment concerning the success or failure of this method of treatment must be withheld. With increasing knowledge and the development of more effective sclerosing solutions (he used Proliferol, the solution developed by Bratrud and his associates at the University of Minnesota) undoubtedly better results may be expected than are now apparent.

LeRoy D. Long.

Distribution of Ureteral Pain; An Editorial appearing in Wisconsin Medical Journal, December, 1937; Dr. George H. Ewell.

The difficulties sometimes encountered in a differential diagnosis between lesions of the urinary tract and lesions of adjacent abdominal viscera has long been recognized by most clinicians. Particularly is this true when the lesions involve the right side of the urinary tract.

The frequency with which symptoms ordinarily attributed to diseases of the gastro-intestinal tract occur with lesions of the urinary tract is also well known. Brooks in a discussion of this subject stated that nausea and vomiting were in many instances the outstanding symptoms of renal disease. Braasch, in a discussion of this subject in 1920, stated that in his clinic approximately half of the patients with lesions in the right kidney and ureter had had previous operations on the adjacent abdominal organs and in most instances the pathology of the ureter and kidney was not recognized.

Bumpus and Thompson found in the study of 1,001 cases of ureteral stone, that nausea and vomiting occurred in 30 per cent; that in 22 per cent of their patients the symptoms were of such nature that appendectomy had been performed; that in 16 per cent a diagnosis of cholecystic disease had been made. Others have reported similar findings.

Ockerblad and Carlson studied the distribution of renal and ureteral pain following stimulation of various portions of the ureter with a faradic current by means of a specially constructed electrode introduced through cystoscope. This excellent piece of work was awarded a certificate of merit in the Scientific Exhibit of the American Medical Association at the last meeting at Atlantic City. Ockerblad's and Carlson's study was done on normal subjects and pyeloureterograms were made to rule out the possibility of any pathologic change in the urinary tract.

The stimulations were applied at intervals of 5 cm. along the course of the ureter and from these studies was noted that stimulation of the interior of the kidney produced pain which was always referred to the back. Stimulation at 25 cm. from the ureteral orifice produced pain which was felt over the anterior portion of the iliac crest and anterior

iliac spine. Stimulation at 26 and 27 cm. produced pain in the region of the anterior iliac spine. Stimulation at a point 10 to 20 cm. from the ureteral opening produced pain which was felt at the same abdominal levels.

This corroborates the clinical reports of many series of cases of ureteral calculi where pain was entirely abdominal in as high as 30 per cent in some series. Stimulation at points between 10 and 20 cm. produced pain on the inside of the leg also, in some instances radiating to the toes.

Stimulation of the ureter at a point 5 cm. above the ureteral orifice, which is within the area where calculi are often found, produced pain slightly lateral to the midline, below the iliac crest and mesial to McBurney's point. In some instances, pain on the inner or outer side of the thigh was obtained from stimulation at this area.

Stimulation of the lower 2 cm. of the ureter produced pain most always in the midline and in the suprapubic region.

This work of Ockerblad and Carlson provides us with experimental information which should be an aid in the differential diagnosis of intra-abdominal lesions and lesions involving the urinary tract, particularly urinary tract calculi.

LeRoy D. Long.

The Effect of Iodine in Adenomatous Goiter; Arnold S. Jackson and H. E Freeman; Journal of the American Medical Association, April, 1936.

There is still some misunderstanding among certain of the profession with regard to the action of iodine in the various types of goiter.

It is generally recognized that iodine in any form (Lugol's solution is usually used) causes a very beneficial response when used in exophthalmic goiter. This occurs practically without exception, but the iodine is especially useful in the preoperative treatment of exophthalmic goiter.

There are, undoubtedly, certain cases of "iodine fast" exophthalmic goiter patients who have been overtreated with iodine. These patients, with the long-continued administration of iodine, finally reach a stage at which their toxic symptoms fail to recede with iodine medication and may even progress. We do not know just how or why this occurs, but it does occur. To be entirely on the safe side, one should not persist too long in iodine medication, even in exophthalmic goiter.

It has been known for over a century that iodine administered in adenomatous goiter often resulted in injurious effects. These "injurious effects," of course, are the development of symptoms of thyrotoxicosis brought on by the iodine. These patients have nontoxic adenomatous goiter which is made toxic by the administration of iodine. The term "iodine hyperthyroidism" has been suggested for this condition. The condition occurs only in the presence of an adenomatous goiter, and since it does not result from the use of iodine in a normal thyroid gland, the term "iodine hyperthyroidism" in an adenomatous goiter was suggested as best describing this entity. There are very few men, notably Means and Lerman, who do not accept this fact that hyperthyroidism is often induced in adenomatous goiter by the use of iodine. Many men, on the other hand, have issued the warning against the danger of the administration of iodine in nontoxic adenomatous goiter. Unfortunately, this warning is often not heeded and, as a result, many patients are rendered hyperthyroid.

The authors hold to the opinion that iodine, injudiciously administered, may be and often is the precipitating factor in producing thyrotoxicosis from a previously nontoxic thyroid adenoma.

It has been shown that adenomatous goiter does not become toxic in patients less than 30 years of age unless this is brought on by the injudicious use of iodine.

However, a simple adenoma, even in a young individual, is a definite contraindication for iodine.

It is felt that when the profession generally is cognizant of the danger of the prolonged use of iodine in exophthalmic goiter, and also cognizant of the danger of producing a toxic adenoma from a nontoxic adenoma by the administration of iodine, that there will be a general lowering of the death rate in goiter throughout the country.

The authors desire to call especial attention to the effect of iodine (they use the aqueous solution) in toxic adenomas. Scant mention has been made of the effect of iodine in toxic adenomas, although since 1923 the literature has been voluminous on the use of iodine in exophthalmic goiter.

Since the response to iodine in exophthalmic goiter and in toxic adenoma is so essentially different, it is difficult to conceive the idea of those men who maintain that these two clinical entities are but variations of the same disease.

Their toxic adenoma cases show many instances in which not only was the basal metabolic rate increased after aqueous solution of iodine, but the various symptoms of hyperthyroidism were aggravated noticeably.

There was noticeable improvement in toxic symptoms, including the basal metabolic rate, in many of their cases (the majority) following aqueous solution of iodine, but it is impossible to estimate just how much of this was due to rest, quiet, sedation and symptomatic treatment and how much was due to iodine.

Their study reveals that approximately 62 per cent (of the toxic adenoma cases) were benefited or were not affected and approximately 38 per cent of the cases the basal metabolic rate, tremor, tachycardia and the like were definitely made worse by iodine.

The authors summarize their conclusions as follows:

1. There may be produced iodine fast cases of exophthalmic goiter.

2. Iodine not only does no good but is definitely contraindicated in nontoxic adenomas of the thyroid.

3. There is danger, in administering iodine in cases of adenomatous goiter, of producing "iodine hyperthyroidism."

4. Adenomatous goiter does not become toxic before the patient has reached the age of 30 unless the toxicity is brought on by the injudicious use of iodine.

5. We have shown that iodine may and does produce thyrotoxicosis in adenomatous goiter as opposed to the contention of Means and Lerman.

6. The effect of aqueous solution of iodine in toxic adenoma is not constant or specific and is not the same as that produced in exophthalmic goiter.

7. Approximately 62 per cent of all cases of toxic adenoma are benefited by iodine or are not affected, while 38 per cent are made worse.

8. In a series of cases of toxic adenomas, toxic symptoms and the basal metabolic rate were aggravated by aqueous solution of iodine.

9. Owing to its variability of action, we believe that iodine should be given as a routine in all cases of toxic adenoma before and after operation, because two-thirds of the cases will be improved, and the harmful effect on the other third is negligible over a short time.

Their final conclusions are as follows:

1. Iodine should not be given to patients with nontoxic thyroid adenomas.

2. The condition termed iodine hyperthyroidism is a definite clinical entity.

3. Aqueous solution of iodine has an inconstant effect in toxic adenomas.

Diabetic or Mycotic Vulvovaginitis. Supplementary Report. H. Close Hesseltine and L. K. Campbell, Chicago, Ill. American Journal of Obstetrics and Gynecology, Vol. 35, No. 2, February, 1938, Page 272.

These authors have studied 58 diabetic patients with vulvitis and pruritis. They have also studied 53 diabetic women without vulvitis or pruritis and 38 control individuals. They have convincing results that the etiological agent of "diabetic vulvitis" is usually, if not always, a fungus.

Of the 58 diabetic patients with vulvitis all but three had a positive fungus culture. There were unusual circumstances about these three patients including fungicides used immediately before culture and menstruation at time of culture which may have vitiated the result.

Of the 53 diabetic women without vulvitis five had positive fungus cultures and have been considered by the authors as probable "carriers" of yeast organisms.

Large quantities of glucose solution were poured over the vulva of patients without fungi five times daily without the appearance of symptoms. However, when glucose was similarly poured over the vulva of patients with fungi present, symptoms and findings typical of mycotic vulvitis appeared in one to five days. This demonstrated the direct relationship of fungi to the vulvitis in diabetic individuals.

In addition, in several instances, all vulva irritation was relieved where fungicidal therapy was employed before patient was placed under diabetic management. There were others who did not improve under diabetic management and the vulvitis was promptly cured by fungicidal therapy.

The following conclusions are justifiably drawn by the authors:

1. In the presence of monilia or cryptococci the application of glucose in powder or aqueous solution will be associated usually, if not always, with the development of a vulvovaginal mycosis or will cause exacerbations of mycosis.

2. In the absence of yeastlike fungi the application of glucose in powder or aqueous solution has produced no symptoms or tissue changes.

3. The incidence of fungi in diabetes mellitus patients with vulvitis, and the similarity of the clinical appearance of mycotic vulvitis and of "diabetic vulvitis" justifies the previous statement that "diabetic vulvo-vaginitis is an infection, usually a mycosis, and rarely, if ever, an irritation from products in the urine."

4. Glucose available in the urine or the tissues favors the development of a vulva mycosis, just as its topical application may do.

5. Fungicidal therapy will cure "diabetic vulvitis."

6. Vulval mycosis occurred in diabetic patients from 12 to 73 years of age.

7. Whenever mycotic vulvitis is found in a nonpregnant patient one should exclude the possibility of diabetes mellitus.

8. Either "mycotic vulvitis" or "fungous vulvitis" is correct and accurate and should replace the incorrect, misleading and obsolete term "diabetic vulvitis."

9. Even such terms as "aphthous vulvitis," "thrush vulvitis," or "yeast vulvitis," do not conform to the modern taxonomy."

Comment: This is a very excellent piece of work demonstrating the etiological agent of vulvitis and pruritis in diabetic women.

Wendell Long.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
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Retained Intra-Ocular Foreign Bodies. William H. Stokes, M.D., Omaha. Archives of Ophthalmology, February, 1938.

This is an analysis of 300 cases of retained foreign bodies in the globe. The review of available literature on this subject shows much confusion as to procedure; it finally depended, apparently, on the preference of the individual. It seems that the older the oculist is in experience, the more conservative is his method of handling these cases.

In 12 of these patients there was absolutely no history of an accident, the foreign body having made a painless entrance into the eyeball.

Roentgenograms were made in all the 300 cases. Demonstration and localization was possible in 97.5 per cent of them. Other routine aids to diagnosis were the ophthalmoscope and corneal microscope. There were 101 cases of this series that had a retained foreign body in the globe.

There are two tables given stating type of foreign body, period retained and end results. The first table has 26 cases in which the foreign body has retained in the vitreous for a period of from one month to 35 years. The second table has 49 cases in which the foreign body was retained either in the retina or in the sclera for a period of one month to 25 years.

Of the nonmagnetic foreign bodies copper was present in 13, brass in 5, lead in 5, glass in 2 and stone in 1. Analysis showed preservation of perfect vision even when the foreign body was present for years in the anterior chamber of the iris. If present in the vitreous, uveitis or panophthalmitis caused loss of the eye. In all cases of the foreign body being brass, enucleation became necessary. Lead, glass and stone in the vitreous had the same end result.

The author's conclusions are:

This study has brought my attention to the following points:

While an inquiry into the history of an accident should always be made of all patients coming to the oculist for examination, a negative subjective history is no criterion that none occurred.

It is of paramount importance to have accurate localization before extraction is attempted, and this can be obtained in all but a few exceptional cases by roentgenographic studies.

Rarely should the magnet be used for the mere detection of a foreign body.

A foreign body located in the anterior segment is best removed by the anterior route, and one in the posterior segment, through the scleral route. Electrocoagulating pins should be used in all cases in which extraction is done by the posterior route. It is best to remove a foreign body from the interior of the eye in cases of recent injury.

The view that the retention of a foreign body in one eye will cause a sympathetic inflammation in the other eye is not sustained by my observations.

On the contrary, I have found that sympathetic irritation developed only in cases in which ill advised efforts at removal were utilized.

Preservation of useful vision or of the eyeball is possible perhaps for the entire lifetime of the patient in spite of the retention of a foreign body in the posterior segment of the globe. One may assume that such a patient could not have fared better had intervention been adopted.

The knowledge that a foreign body within the eye may be tolerated for prolonged periods of time is worthy of consideration when one is deciding on the management of such cases, and conservative treatment is more often indicated than recommended by the majority of writers on the subject. However, the patient must be under the observation and care of a competent oculist for a period of years.

Treatment of Lateral Sinus Infections Without Operation on the Jugular Vein. E. Miles Atkinson, M.D., F.R.C.S., New York. Archives of Otolaryngology, February, 1938.

Zaufal in 1880, first suggested ligature of the internal jugular vein in thrombosis of the lateral sinus. Since that time the argument has gone on—to tie or not to tie. The orthodox procedure is to tie the internal jugular if a thrombosed lateral sinus is found.

The author maintains that ligature of the vein does not stop the spread of the infection. Collateral channels in the inferior petrosal sinus and the venal condyloidae afford additional channels along which the infection may travel. Also when the internal jugular is tied off, the point of the ligature may well become another focus even aiding an additional thrombosis rather than inhibiting the formation. Length and severity is added to the operation by tying the vein. There is a resulting neck scar.

A review of the literature shows: Korner in his 1925 book shows 60 per cent recovery, either with or without ligation; Grunberg shows 21 cases ligated of which only 15 per cent recovered—40 cases were not ligated with 60 per cent recovered; Undritz from his experiment concluded:

1. That ligature of the vein exercises no noticeable influence on the course of the disease.
2. That experimental sinus thrombosis shows a tendency to spontaneous recovery and,
3. That the thrombus is to be regarded as a protective mechanism not lightly to be interfered with.

The 15 cases reported are divided into three groups.

1. Cases in which there were granulations on the sinus wall without demonstrable thrombosis—8.
2. Cases in which there were inflammatory changes in the sinus wall with gross thrombus formation—5.
3. Cases in which there was necrosis of the sinus wall without thrombosis—2.

Five of the 15 cases showed thrombosis. Ligature of the internal jugular was done on two cases. Positive blood culture was found in two cases. Nine cases of perisinus abscess or pathologic exposure of the sinus were treated by full exposure of the sinus. One case was complicated by a cerebellar abscess. All cases recovered.

The author as the above shows does not abandon the ligature of the internal jugular altogether. He has three indications for ligature.

1. Tenderness along the internal jugular vein.
2. Unexplained lymphadenitis (palpable) may signify phlebitis and thrombosis.
3. If the patient has as many as three rigors postoperative, the jugular vein is explored.

The External Operation on the Maxillary Sinus. Arthur M. Alden, A.M., M.D., F.A.C.S., St. Louis, Mo. The Southern Medical Journal, March, 1938.

Lamorier first did the external operation in 1743. Luc and Caldwell, in 1897, working independently, improved the original operation by making a permanent opening into the inferior meatus from the antrum. This has remained a fundamental principle although different operators have variations.

Indications for the operation: Continued suppuration from the antrum even after adequate intranasal drainage, antral disease of dental origin (fistula through the alveolus or tooth fragment in the cavity), degeneration of the mucosa (shown by lipiodol X-rays or antroscopy), presence of a cyst or new growth.

Before operation: If lues is present, patient should be well medicated before operated; X-ray of all teeth under the floor of the sinus—if dental disease is present then remove before operation to prevent reinfection; cytologic and bacteriologic study of pus lavaged from the antrum (if Vincent's is present, give neoarsphenamine intravenously—if streptococcus, give sulfanilamide—if staphylococcus, then there is possibility of a later osteomyelitis).

Two factors are to be considered at operation, the comfort and safety of the patient and the method that will insure the greatest ease and efficiency to the operator. The author thinks general anaesthesia makes the operation more difficult for the surgeon in addition to the added hazard of a later lung complication. He prefers local anaesthesia. Avertin has been discarded. A grain and a half of pentobarbital is given an hour before operation; a half hour before operation a quarter of a grain of morphine (H) is given and the same dose of pentobarbital is repeated. This leaves the patient cooperative and relaxed but not unconscious.

Blair's method with a Barnhill needle is used to block the maxillary division of the nerves trigeminus on the affected side. Three c.c.'s of two per cent procaine with 10 drops of epinephrine are used. The author states that in over 200 injections he has had no following complications.

Three or four minutes after the injection the operation is started. Intra-nasal medication is not used. The gum and lower part of the canine fossa are injected with the same solution for ischemia only. A new approach is used to prevent severing of the nerve endings and the subsequent postoperative anaesthesia.

A horizontal incision extends from the canine tooth backward including the second molar; a vertical incision next extends from the gum margin between the lateral incisor and canine teeth upward one inch (including the periostium); the periostium is elevated and the whole triangular flap is retracted upward. The operation then proceeds in the routine manner. Time consumed is usually about 30 minutes.

Two or three black silk sutures are used to close which are removed on the fourth or fifth day. No packing is left in. Iced compresses are used on the operated side for 24 hours. The sinus is irrigated with a curved cannula with warm saline solution the fifth day. Inspection is made with an antroscope or a nasopharyngoscope from time to time.

The Development of Modern Methods of Estimating Refraction. W. B. E. McCrea, M.B., B.Ch., D.O.M.S., Dublin. The British Journal of Ophthalmology, March, 1937.

This is an interesting historical account of spectacles and methods of fitting them. An enormous amount of time and energy must have been expended during the compilation.

The first account of a glass being used as an aid to reading was by Marco Polo, while traveling in China in 1270. The invention of spectacles is credited to Alessandro Spina, a Dominican friar of Florence, who died in 1313. Salvino D'Armato also claims this honor.

The first reference to glasses in medical literature is made by Bernard de Gordon, a teacher of medicine at Montpellier. They are mentioned casually so evidently had been in use some time. The cost of a pair of glasses at this time was the equivalent of what is now fifty pounds.

During the fifteenth and sixteenth centuries the medical profession was strongly opposed to the use of spectacles. Literature was written on how to protect oneself from wearing glasses as well as how to rid oneself of the habit.

Tourmaline, beryl, quartz and later glass were used in making the lenses. In Germany the first frames were made of leather and reinforced with fish bones. The first side pieces were of string.

James Ware early in the nineteenth century made some very accurate observations and may truly be termed the discoverer of hypermetropia.

Thomas Young in 1793 and Airy in 1827 introduced cylindrical lenses for the correction of astigmatism.

Benjamin Franklin invented bifocals about the end of the eighteenth century.

Among the earlier works on ophthalmology, as "Synopsis of Diseases of the Eye," there was no mention made of any refraction problems.

Sir William Lawrence, 1833, regarded farsightedness and presbyopia as synonymous. Students were generally thought to be myopic. In management of myopia strange procedures prevailed such as avoiding anything that tended to promote the flow of blood to the head. Abstinence of heating drinks, attention to diet, washing eyes with cold fresh spring water, stimulating foot baths, etc.

If anisometropia existed and the one eye was myopic, the good eye was to be occluded and the other eye exercised.

In 1840, William McKenzie of Glasgow published a treatise on diseases of the eye which was widely read on the British Isles, Continent and in the United States. In it he makes the statement that after cataract extraction no glasses should be given as long as the vision is improving.

There were two theories of asthenopia: First that it was a peculiar disposition of the retina to become congested; the second explained it as a painful compression of the eye, caused by contraction of the ocular muscles.

John Whitaker Hulke, 1830, said that in his student days the ophthalmoscope was unknown and a half-dozen convex and concave spherical lens constituted sufficient stock for fitting glasses.

In 1864, Cornelius Donders, Professor of Physiology and Ophthalmology in the University of Utrecht, revolutionized the attitude of the Medical Profession towards problems of refraction with his book, "On the Accommodation and Refraction of the Eye."

The writer continues the tracing of the development and growth of refraction quoting various authors and relating numerous theories and beliefs of that day. The history is carried up to 1870. J. Soelberg Wells is given credit for the beginning of modern refraction as we know it. He deplores the haphazard plan of the opticians in fitting glasses. He advocates the medical man selecting the proper lens, writing this on a piece of paper, which is taken to the optician, who then furnishes the correct lens to the patient.

UROLOGY

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Calculous Disease in the Urinary Tract. Linwood D. Keyser. Bulletin of the New York Academy of Medicine. February, 1938. Roanoke, Virginia.

A comprehensive article in which the author discusses some of the causes for the formation of stone together with an outline of treatment based on modern day concepts of this disease.

He states that stone formation tend to develop when colloids and crystalline material are simultaneously precipitated in the free urinary stream. The collodial jel enmeshes agglutination crystals and forms the organic framework which around and within these crystals are laid down as building elements. This process may be stimulated both by hyperexcretion of crystalline material through the kidneys beyond the power of the urine to maintain solubility and entrance of foreign colloid into the urinary stream.

The second etiologic factor responsible for the formation of stone is the impregnation or encrustation of cells, bacteria, tissues or foreign bodies with urinary salts.

Other factors that he discusses is the relation of vitamine deficiency, urinary reaction, urostasis, fractures and disease of bone as also parathyroid disease. He is not enthusiastic in support of vitamine deficiency as a cause for stones as he feels that patients with stones for the most part have a dietary adequacy of vitamin A; however, urinary acidity or alkalinity does play a large part in speeding up or retarding the formation of stones.

The relation of urostasis as a primary cause for the formation of stones is entirely lacking. However, in maintaining infection and stagnation it is a matter of great moment. He epitomizes the treatment of stones in a detailed chart and the following procedure is suggested:

1. Remove all stones and fragments as far as possible, by surgery or cystoscopy.

2. A qualitative chemical analysis of the stone removed should be carried out immediately.

3. X-rays should be made immediately and at intervals of six months to one year for several years after the operation.

4. Seek and correct possibly related metabolic errors.

5. The diet should be carefully regulated with regard to the composition of the stone; low oxalate dietary in oxalatic stones and low purin diet in uratic calculi.

6. Vitamin administration as a tonic to the epithelial structures.

7. Elimination of urinary and focal infections.

8. Establish satisfactory renal and ureteral drainage.

9. Shift the urinary reaction to the range which will best keep the stone-forming crystals in solution.

10. Patients with fractures, infections of the bones, or patients long bed-ridden should have their urine kept acid by diet and drugs and furnished ample vitamines as a prophylaxis against stones.

Newer Physiology of Prostate Gland. James I. Farrell. Chicago, Illinois. Journal of Urology. February, 1938.

A detailed study of the prostatic secretion in dogs from a pharmacologic standpoint.

By injecting various drugs and noting their effect on the quantity and rate of secretion it was concluded that the innervation of the prostate is chiefly parasympathetic in nature. Pilocorpine markedly stimulates secretion, atropine antagonizes pilocorpine stimulation and renders hypogastric stimulation inactive; Ephedrine stimulates the gland to a slight extent; histamine and yohinbine do not affect secretion from the gland.

The prostate definitely excretes the majority of drugs commonly used for antiseptic purposes in detectable quantities. It was found that prostatic secretion in itself has a difinite bactericidal action, however, this effect was not particularly enhanced by the excreted drugs.

An interesting phase of this study was the observation made on the elimination of alcohol by the gland. The concentration of alcohol found in the secretion nearly approached that found in the urine following administration in standardized amounts. It was also found that a definite deleterious action was exhibited on the viability of the sperm which suggested that alcohol may be a factor in sterility. Also this may explain the bad effects noted clinically from excessive alcoholic ingestion in cases of prostatitis.

PLASTIC SURGERY

Edited by

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Vitamin Oils in the Treatment of Burns, an Experimental Study. Charles B. Puestow, M.D., F.A.C.S., Henry G. Poncher, M.D., and Harold Hammatt, B.M., Chicago, Ill. S. G. & O., March, 1938.

The authors have carried out an experimental study to determine the value of several oils and other commonly used agents in the healing of burns.

In 1905 Wuttig produced endothelial proliferations in the liver by injecting cod liver oil into the mesenteric veins of rabbits, whereas olive oil was inert. Bond used irradiated ergosterol in liquid petrolatum as a dressing for ulcers and granulating wounds. He believed that the ointment reduced infection, promoted healthy granulations and stimulated epitheliazation. Loehr has used cod liver oil dressings extensively in the treatment of burns and other wounds. He became quite enthusiastic about this treatment which was used in the form of a paste and when on the extremity was encased by a plaster cast, the dressings were changed infrequently as possible. He further believed that skin grafting was unnecessary in many of these cases due to the fact that the wounds rapidly healed under his form of treatment. He thought the number of late fatalities was reduced, more so than with tannic acid treatment.

Various other workers have indicated that ointments containing vitamin A and D are effective in the treatment of ulcers and burns.

The authors point out the method of producing burns in pigs and rabbits by using an electrocautery locally. They attempted to produce a burn of small size and depth for a comparative study. They then used five different preparations in order to study the effect of each on the healing of burns.

The oils employed and their identification numbers are as follows:

1. Olive oil free of vitamins.
2. Cod liver oil containing 1,800 units of vitamin A and 175 units of vitamin D per gram.
3. Irradiated ergosterol in oil containing one million units of vitamin D per gram.
4. Fish liver oil containing 45,000 units of vitamin A and 75,000 units of vitamin D per gram.
5. Fish liver oil containing 380,000 units of vitamin A and 2,000 units of vitamin D per gram.

Five per cent tannic acid solution was applied to other lesions and control lesions were left untreated.

Summary: Controlled burns were produced upon pigs and rabbits and were treated with ointments containing varying amounts of vitamin A and vitamin D content. The time and character of local wound healing was determined and compared with untreated controls and burns treated with tannic acid.

Burns treated with five per cent fresh tannic acid solution healed in the same length of time as untreated controls of similar average size. The application of vitamin free olive oil ointment to slightly larger burns was followed by complete healing in the same length of time as the controls. Cod liver oil ointment shortened by 25 per cent the healing period of burns equal in size to the controls. Burns which averaged 50 per cent larger than the controls were treated with three high vitamin ointments, No. 3 containing no vitamin A but very high vitamin D, No. 4 having a low vitamin A to vitamin D ratio, and No. 5 with a high vitamin A to vitamin D ratio. The time of healing was approximately 25 per cent shorter than in the smaller control lesions and those treated with tannic acid. It was no longer than in the smaller lesions treated with cod liver oil ointment of low vitamin content. The response to the various high vitamin ointments employed was approximately the same. Histological studies of the scars of all healed burns revealed no characteristic difference for the various therapeutic agents employed.

Comment: In the treatment of burns it is often necessary to change the type of treatment. Especially is this true in cases which for some reason or other fail to continue the regeneration of epithelium. These cases might be compared to cases that have non-union of bones especially where fractures are multiple. In other words the power or the ability to continue to heal is lost. In such cases scarlet red ointment sometimes will give the necessary stimulus to the epithelium. In other cases one of the oils containing vitamins will be more successful. In addition to the ointments the general condition of the patient must be improved by adequate care, diet, blood transfusions and any other measure that will improve the vital process. Exposure of burned areas to ultra violet light is of benefit. Recently the so-called bruised yeast cells have been employed and this ointment seems to stimulate the epithelium. Also granulations remain healthy and the periphery of the burned area remains soft and pliable whereby some of the area otherwise treated becomes thick and friable.

The authors in this case have, I believe, shown some evidence of the stimulating value of ointments containing vitamins. Since there are so many varied applications recommended it is difficult to follow each one in detail. Personally I like to cleanse burned areas daily even when using any kind of ointment, then reapply whatever medica-

tion is being used. In this way one can follow more accurately the progress of healing.

The ointment containing bruised yeast cells can be readily removed by wet dressings in preparation for a skin graft. Also scarlet red ointment can be readily removed the same way. However personally I like to keep the burned surfaces cleansed by frequent wet dressings if there is a skin graft contemplated.

INTERNAL MEDICINE

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HUGH, JETER, M.D., F.A.C.P., A.S.C.P.

Diseases of Metabolism and Nutrition, Review of Certain Recent Contributions. Russell, M. Wilder, M.D., Ph.D., Rochester, Minn., and Dwight L. Wilbur, M.D., San Francisco. Archives of Internal Medicine, Vol. 61, No. 2, February, 1938.

In this the authors have again reviewed the literature for one year including 224 separate articles covering a great variety of subjects involving metabolism and nutrition such as follows:

1. Disorders of fat metabolism.
2. Obesity.
3. Experimental diabetes.
4. Protamine Zinc Insulin.
5. Other insulins with prolonged action.
6. Nutrition.
7. Reports abstracted separately on the various vitamins.

Diabetes: Many reports concerning protamine zinc insulin have been made. The opinion that it is a definite improvement in treatment continues to prevail. Whitehill and Harrop believe that patients who are not cooperative and who are lax in the management of their diet do badly with protamine zinc insulin and that such patients will find the use of unmodified insulin safer and on the whole more satisfactory. They also point out that in cases with diarrhea as a complication in which absorption of food from the bowel is uncertain, protamine zinc insulin is unsafe to use. Sherrill and Cope question whether any particular advantage is to be gained from protamine zinc insulin in cases in which formerly a normal balance could be maintained with unmodified insulin. Warvel and Shafer emphasize that the use of protamine zinc insulin requires more effort on the part of the physician. Severe diabetes requires more than one dose of protamine zinc insulin and makes it necessary frequently to add unmodified insulin. Experience at the Mayo Clinic and also of Joslin indicates that protamine zinc insulin and unmodified insulin are not satisfactorily given mixed together in a syringe. Protamine zinc insulin of 80 units strength has been recently distributed but reports show its use seems very rarely indicated.

Most American and Canadian physicians continue to administer protamine zinc insulin in one dose daily before breakfast but a few have found other periods during the day satisfactory. One author gives it two hours before breakfast and another reports good results with the administration at 11 p.m. Wilder says "If one insists on having continuously sugar-free urine when only protamine zinc insulin is used, chronic hypoglycemia is unavoidable at least in many cases." There appears from the literature to be a number of observers who believe a trace of sugar in the urine is desirable for the well being and comfort of the patient.

Reports indicate most satisfactory results with a diet of 150 gm. of carbohydrate or less most satisfactory for protamine zinc insulin therapy. However, some have been able to use higher diets. Four meals or more per day are used by most authorities.

Protamine zince insulin is being used more in emergency than previously, such as acidosis, acute infections and surgery.

Peck reports six cases of allergy to protamine but Wilder has encountered none.

Its Quick Action Prevents Deformities

No antiricketic substance will completely straighten bones that have become grossly misshaped as the result of rickets. But Oleum Percomorphum can be depended upon to prevent ricketic deformities if given early and in adequate dosage. This is not true of all antiricketic agents, many of which are so limited by tolerance or bulk that they cannot be given in quantities sufficient to arrest the ricketic process promptly, with the result that the bones are not sufficiently calcified to bear weight or muscle-pull and hence become deformed.

Mental Effects of "Benzedrine Sulfate"

Molitch and Sullivan (Am. J. Orthopsych., 7:519, Oct., 1937) report on the mental effects of "Benzedrine Sulfate" (benzyl methyl carbinamine sulfate, S.K.F.).

The New Standard Achievement Test was given to a group of 96 boys aged 10 to 17. A week later the same boys took the test again about 1½ hours after 50 of them had received a 10 mk. "Benzedrine Sulfate" tablet and the remaining 46 a placebo.

The 46 boys on placebos scored a net loss of 29 points, while the 50 boys on "Benzedrine Sulfate" scored a net gain of 63 points, although 26 of the 50 did not show noticeable improvement. Some weeks later these 26 received 20 mg. (or double the previous dose) for a third test. Twenty-fourt of these boys, or 92 per cent, improved their scores with a net gain of 117 points.

The greatest responses were noted in language usage, geography, physiology and hygiene, and arithmetic. Normals of average intelligence and feeble-minded boys responded better than normals of inferior intelligence. Grouped according to academic age, it was found that the boys in junior high school showed greater improvement on "Benzedrine Sulfate" than those in lower grades.

Reactions were mild and transitory, although hypersensitivity to "Benzedrine Sulfate" induced nausea in the cases of two boys who failed to respond even to the double dose of "Benzedrine Sulfate."

Care Of The Feet In Chronic Arthritis

John G. Kuhns, Boston (Journal A. M. A., Oct. 2, 1937), contends that chronic arthritis in its early stages usually presents the same pedal symptoms which are caused by chronic strain. Differentiation can usually be made from the history of progressive impairment of the general health, involvement of other joints and stiffness of the feet after rest, which lessens with continued use. The swelling is variable in degree but more widespread and not limited to a special location. Limitation of motion in the midtarsal joints is one of the most common early symptoms. The blood sedimentation index is elevated in most instances. Roentgenograms, which usually show nothing abnormal at the onset of the disease except swelling of the soft tissues, show progressive bony atrophy, clouding of the joint spaces and increasing narrowing and irregularity of the articular surfaces. These symptoms and these

changes in the feet will be observed in about three fourths of all patients with early chronic arthritis. The only certain method of preventing future disability is to avoid weight bearing until the pain and swelling in the feet subside. Before the patient again becomes ambulatory, proper shoes and adequate support should be given to prevent strain. If inadequate or no treatment is given and the arthritis remains, increasing deformity usually occurs. The deformity most commonly seen is one with the foot stiff in valgus. Because weight bearing is faulty and because normal use of the intrinsic musculature of the foot is prevented, the muscles atrophy and a widening of the anterior part of the foot is seen, a flattening of the so-called anterior arch. This is followed by undue pressure on the heads of the metatarsal bones, and the symptoms are usually pain and tenderness. When this degree of deformity has come, disability is severe, and the patient usually walks with great difficulty. The severe strains, which come chiefly on the foot and the knee, aggravate the arthritis, and no subsidence of the inflammatory processes in the joints can be expected unless the deformity is corrected. When weakening of the intrinsic muscles of the feet and spreading of the forepart of the foot persist, two other deformities develop, hallux valgus and contracted toe deformity. Operative correction is not always necessary in the early stages of these deformities. Temporary cessation of weight bearing and exercise to develop the flexors of the toes and the intrinsic muscles of the forefoot will help greatly. The chief concern is adequate support to the anterior part of the foot. When rigid deformity is present and the arthritis is inactive, a manipulation of the toes into flexion with the patient under anesthesia may be required. After the manipulation, the toes can be held in plantar flexion by adhesive strapping for several days. Repeated manipulations will at times result in normal function of the toes. When subluxation of the proximal phalanx persists and there is marked deformity of the joints, the most rapid and usually the most satisfactory result is obtained by the operative removal of the distal half of the proximal phalanx. If the hallux valgus is severe, operative correction by removing the proximal portion of the first phalanx of the great toe usually gives the best functional result. Extensive reshaping of deformed bones has not proved a desirable procedure. After operation marked changes take place in the atrophied bones as the result of function. The simplest and least traumatic surgical procedure gives the best end result. Operative procedures are undertaken only when the arthritis is quiescent. Ankylosis of the phalanges is not commonly seen. When it has occurred, removal of the entire proximal phalanx has given painless function without the subsequent development of calluses under the toes. Tallux rigidus can frequently be relieved by a long plate or by greater rigidity in the sole of the shoe. Occasionally the ankylosis of the tarsal-metarsal joints can be broken by manipulation, but usually an operation is required. The simplest procedure is removal of the proximal half inch of the metatarsal bone. Ankylosis in the tarsal joints rarely yields to manipulation. If a fair weight bearing position of the foot cannot be secured with proper shoes and foot plates, an operative correction of the deformity is indicated. The most useful procedure is a wedge osteotomy through the subastragalar joint or through the dorsum of the foot, with the foot held subsequently in a good weight bearing position while the site of the osteotomy heals. Spurs are frequently found in feet troubled by arthritis. When a proper weight bearing position of the foot has been obtained and the foot strain has been relieved, the symptoms have disappeared in all but a few cases. A disability constantly associated with arthritic involvement of the feet is epidermomycosis. The infection yields readily to the usual remedies, but reinfection often occurs until the arthritis becomes quiescent and the circulation in the foot improves.

Malunited Colles' Fractures

Willis C. Campbell, Memphis, Tenn. (Journal A. M. A., Oct. 2, 1937), points out that two entirely different surgical principles may be employed in malunited fractures: one restoring function by a compensatory procedure, the other by reconstructing normal anatomic relationships. The most efficient procedure is a plastic operation of the bone whereby the normal angle of the articular surface is restored, the radial shortening corrected and the prominence of the distal end of the ulna removed, thus reproducing normal external and bony contour. The technic of the operation is as follows: A lateral incision is made over the lower extremity of the radius about two inches in length through the skin and superficial fascia between the brachioradialis and the abductor pollicis longus and the extensor pollicis brevis. The line of fracture is exposed. A transverse osteotomy is made through the radius about three-fourths inch to an inch above the distal articular surface, after which correction of the posterior angulation of the lower fragment can be made by acute flexion of the wrist so that the lower fragment is angulated slightly downward and forward. In this position a hemostat can be inserted between the fragments and opened with moderate force, thus, separating the fracture surfaces and demonstrating the amount of increase that can be obtained in the length of this bone. A skin clip is now placed so as to close this wound temporarily. An incision is then made for about 2 inches over the medial aspect of the lower extremity of the ulna through the periosteum, which is stripped off of the inner half from above downward, exposing the articular surface and the styloid process. With a small osteotomy the inner half or third of the head and inner portion of the shaft is severed from below upward, thus securing a free graft of bone about one inch in length and about one-half inch in thickness at one extremity and tapered at the other. The free graft of bone is trimmed to make a pyramidal wedge with a base on the dorsal as well as the lateral aspect, which is inserted into the space between the fragments. The dorsal wedge maintains the normal angle: the lateral wedge prevents recurrence of radial shortening. Care must be taken that there is slight overreduction of the lower fragment; that is, slight anterior angulation. Both wounds are then closed and dressed with small gauze pads. On inspection the external contour should be approximately normal except that the head of the ulna may not be prominent. The lateral dimension or width of the wrist should be normal, and on palpation the lower extremity of the styloid process of the radius should be distal to that of the lower extremity of the ulna. A sterile flannel bandage is placed from the metacarpophalangeal joints below to just above the elbow, and the sugar tong cast or molded plaster anterior and posterior splints are applied. While this is consolidating, the forearm is held in midposition, the wrist in slight flexion, with pressure over the dorsum of the wrist so as to make the posterior capsule of the wrist joint tense, thus maintaining the lower fragment of the radius. A roentgenogram is then made which should demonstrate practically normal anatomic alinement. Surgical procedures have been carried out in forty-one cases of malunited Colles' fractures; twenty-two were simple osteotomies of the radius; nineteen were plastic procedures on the bone as described. A reasonably high percentage of function was restored by osteotomy alone, but the radial shortening and prominence of the ulna were

not corrected. The results from the plastic procedure on the bone have been uniformly excellent, meaning that contour is approximately normal and function restored to a material degree.

Testing of Activity of Childhood Tuberculosis: Relative Value of the Schilling Differential Count, Sedimentation Rate and Lymphocyte-Monocyte Ratio

Through the cooperation of Brown, Stafford and Cole of Blue Ridge Sanatorium, Charlottesville, Va., W .Ambrose McGee, Richmond, Va. (Journal A. M. A., March 5, 1938), made a study of the relative value of the Schilling differential blood count, the sedimentation rate and the lymphocyte-monocyte ration on 40 tuberculosis children over a period of approximately six months. A study of the cells in the circulation at regular intervals and under similar conditions by the same person gives a mental picture of the pathologic changes occurring. The laboratory data alone do not in any way suggest the kind of infectious agent, for red and white cells respond only to the type of damage done to the tissues. Total white cell counts by themselves are of relatively little or no prognostic value but when considered from the standpoint of total neutrophils, lymphocytes and monocytes are of value. Through a consideration of the maturity of the neptrophils or the sedimentation rate, the best prognostic information is obtained. Any dfeinite lymphocyte-monocyte ratio was unobtainable because of the great fluctuation in the monocytic percentages. However, a normal monocyte count with an elevated lymphocyte count indicates healing, whereas, the reverse ratio suggests extension of the tuberculous infection. When clinical courses do not parallel laboratory data, especially the shifts and the sedimentation rates, it is advisable to pay more attention to those two tests. Evidence of relapse or rotrogression is first noted in the Schilling shift days or weeks prior to X-ray or physical evidence. A continuous septic type of blood picture is more suggestive of extension of the pathologic process, and there is danger of hemorrhage. The blood picture indicates the status of the infection only at the time the blood is obtained for study.

The Chemistry of Thiamin (Vitamin B^1)

In an endeavor to promote the adoption of a universally acceptable term for vitamin B^1, based on the chemistry of the substance, Robert R. Williams, New York (Journal A. M. A., March 5, 1938), has proposed "thiamin" (chloride, bromide, sulfate and so on) pending action of the Conference on Vitamin Standardization. The greater part of the labor which has been expended on the chemistry of this substance had to do with its isolation. Once a few grams of the vitamin became available, its structure was fully established in three years and its synthesis followed almost immediately. The biochemistry of thiamin, biochemical lesion in thiamin deficiency and the methods of its assay an ddistribution in foods are discussed. The therapeutic response to thiamin remains the most trustworthy diagnostic test. The diagnostic value of thiamin therapy is largely lost if crude natural preparations are used both because of the uncertainty of their standardization and of the presence of other vitamins which may be responsible for the observed effects. After demonstrating a B^1 deficiency and rectifying the immediate shortage, the physician should endeavor to direct the diet of the patient toward a more adequate supply of the vitamin. In the long run one should look to the grocery store rather than the drug store for a normal intake.

Audiometers and Hearing Aids

In order to determine their comparative performances for air conduction tests and the need for pure wave form in clinical practice Austin A. Hayden, Chicago (Journal A. M. A., March 5, 1938), investigated four audiometers of different make. Audiometers, despite their variations, furnish the best means of testing hearing acuity. Any one of the four tested will be more useful in clinical practice than any other means now available for testing and recording hearing acuity. The lack of purity of sound wave apparently did not introduce any serious errors that were not largely explainable by other causes. A quiet room is essential. The need for a soundproof room increases as the loss of hearing to be tested decreases. An audiometer should be part of the office equipment of every otologist.

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